# DELHI TECHNOLOGICAL UNIVERSITY

# Minutes of the 11th Meeting of the Academic Council

held on 24.06.2015

Shahbad Daulatpur, Bawana Road, Delhi-110042

# DELHI TECHNOLOGICAL UNIVERSITY
Established under Govt. of Delhi Act 6 of 2009
(Formerly Delhi College of Engineering)
BAWANA ROAD, SHAHBAD DAULATPUR, DELHI-42

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**No. F.DTU/Org/AC/Meeting/01(1)/10/Vol-III/** 4697-4713  Dated: 29|6|15

Minutes of the 11ᵗʰ meeting of the Academic Council held on 24.06.2015 at 10.30 a:m in the Senate Hall of DTU.

The 11ᵗʰ meeting of the Academic Council of DTU was held on 24.06.2015 at 10.30 a:m in the Senate Hall of DTU.

The following members were present:

1. Prof. Pradeep Kumar, Vice Chancellor, DTU.
2. Prof. C.R. Babu, Professor Emiritus, University of Delhi-110007.
3. Prof. S.K. Garg, Pro Vice Chancellor, DTU.
4. Prof. Vishal Verma, Dean (PG), DTU
5. Prof. R.K. Sinha, Dean (UG), DTU
6. Prof. Vikas Rastogi, Dean (SW), DTU
7. Prof. Ashutosh Trivedi, Dean (IRD), DTU.
8. Prof. R.S. Mishra, HOD, Mechanical Engg. Department
9. Prof. S.C Sharma, HOD, Deptt. of Applied Physics
10. Prof. A.K. Gupta, HOD, Env. Engg. Department
11. Dr. Seema Singh, HOD (Humanities)
12. Prof. D. Kumar, HOD (Applied Chemistry), DTU.
13. Prof. P.K. Suri, HOD (DSM), DTU.
14. Prof. Madhusudan Singh, HOD, Electrical Engg. Deptt.
15. Prof. O.P. Verma, HOD, Computer Sc. Engg.
16. Prof. Nirendra Dev, HOD, Civil Engg.- Deptt.
17. Dr. R. S. Walia, HOD, T & P Deptt.
18. Prof. Pragati Kumar, Deptt. of Electrical Engg. (Invitee)
19. Dr. N.S. Raghav, Deptt. of E & C
20. Dr. Mukhtiyar Singh, OIC-B.Tech (Eve.) (Invitee)
21. Dr. A.K. Madan, Deptt. of Mech. Engg.
22. Dr. M.S. Ranganathan, Deptt. of Mech. Engg.
23. Dr. Neokant Dev, Deptt. of Mathematics
24. Sh. R.K. Shukla, Librarian (Invitee)
25. Col. Neeraj Suri (Retd.), Registrar, DTU.

Prof. S.K. Jain, Prof. B.J. Alappat, Prof. Vir Singh, Mr. O.P. Bhutani, Mr. Sanjeev Kumar Gupta, Prof. H.C. Taneja, Dean (A.& I.A.), Dr. Sangita Kansal, HOD (Applied Mathematics) and Prof. P.R. Chaddha, HOD, E & C could not attend the meeting due to their pre-occupation and some of them being on leave.

**Agenda 11.1  :  Chairman's opening remarks.**

The Chairman, Academic Council welcomed the two newly nominated members namely Dr. A.K. Madan and Dr M.S. Ranganathan to the Academic Council. He informed the members that the process of framing of Rules, Regulations and Reforms in the Examination System, have been initiated by the

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University for maintaining total transparency and higher efficiency. He further explained that the new UG Guidelines for Teaching coupled with revised curriculum for the 1st year B.Tech. students and introduction of Grading System have been attempted after being duly deliberated by HODs and Deans and different Committees. Further, reforms in the area of academic have also been taken up to improve the overall functioning standards of the University.

**Agenda 11.2  :  Confirmation of the minutes of the 10th meeting of Academic Council held on 07.04.2015.**

The Minutes of the 10th meeting of the Academic Council held on 07.04.2016, were circulated among all the members vide Ref. No.DTU/ORG/AC/Meeting/01(1)/2010/Vol-III/513-25 dated 17-04-2015; no comments have been received from any of the members.

*Decision  :  The Academic Council confirmed the minutes of 10th AC meeting.*

**Agenda 11.3  :  Action taken report on the decisions taken in the 10th meeting of the Academic Council.**

*Decision  :  The Academic Council took the action taken report on record.*

**Agenda 11.4  :  Matter for ratification:**

**i.  Delegation of power to sanction expenditure to the Dean (UG/PG).**

It was submitted to the Academic Council that the Competent Authority delegated the power to sanction the expenditure to the under-mentioned Deans with immediate effect with a view to streamline and to avoid delay in the matters of payment in respect of the below listed events until further orders:
Dean (PG) : For expenses related to SRCs, DRCs
Dean (UG) : For expenses related to conduct of BOS.

**ii.  Modus Operandi for appointment of Examiners, Schedule of practical examination & conduct of practical examination from Even Semester 2014-15 onwards.**

It was submitted to the Academic Council that in view of the decision taken in the 10th meeting of the Academic Council dealing with examination system reforms, the Competent Authority has approved the modus operandi to be adopted for appointment of Examiners, Schedule and conduct of Practical Examination from even semester 2014-15 onwards. A copy of the notification which has been issued by the Registrar on 29-04-2015 for implementation is placed as ***Annexure at page 1.***

iii.    **Completion of course work as well as comprehensive examination.**

It was submitted for information of the Academic Council that 17 Ph.D. scholars have successfully completed course work as well as comprehensive examination as per the Ph.D. Ordinance clause 10.3, the Hon'ble V.C. has already approved their provisional registration. The matter is placed before the Council for ratification. A list of Ph.D. scholars who have been successfully completed course work and comprehensive examination is placed as *Annexure at page 2.*

iv.    **Approval for Selection Criteria of candidates for admission to Executive-MBA program for the year 2015-16.**

It was submitted to the Academic Council that the Executive MBA program was started in 2013 with the following seat matrix:

| Gen | OBC | SC | ST | Total |
|-----|-----|-----|-----|-------|
| 15 | 8 | 5 | 2 | 30 |

Two seats over and above the sanctioned intake have been earmarked for faculty and staff of DTU.

One Hundred Fifty Two (152) applications have been received for admission to 2015-17 Batch. It is inclusive of five applications received after last date of submission of application i.e. 30/04/2015. Out of One Hundred Fifty Two (152), Six (06) candidates don't meet the eligibility criteria as specified for the program and one candidate has filled application of Full Time MBA program. Therefore, One Hundred Forty Five (145) candidates have been found eligible as per the details given below:

| General | OBC | SC | ST | Category not mention | Total |
|---------|-----|-----|-----|----------------------|-------|
| 125 | 10 | 9 | 00 | 01 | 145 |

The following criteria was used for selection of the candidates during 2013-15 and 2014-16 batch:

| Weightage to Academics Performance | Weightage to Experience (yrs) | Personal Interview | Grand Total |
|-----------------------------------|-------------------------------|--------------------|-------------|
| 15* | 15** | 20 | 50 |

*Highest of the UG/PG are considered subject to a maximum of 15 marks under this component.

**One mark for every year of completed service subject to a maximum of 15 marks under this component.

In case of a tie in the final score, candidate with higher Date of Birth shall be ranked above.

The University has followed the same selection criteria for 2015-17 batch also.

v. **Appointment of Assistant Professors on contractual basis for the session 2015-16.**

It was submitted to the Academic Council that the University is facing an acute shortage of faculty. With a view to run the University and to conduct the classes in the interest of the students without any hindrance, it is proposed that Assistant Professors on contractual basis may be appointed. In this regard, it is submitted that in the session 2014-15, 147 posts were advertised for the Assistant Professors on contractual basis in various disciplines. Against the 147 posts only 47 persons have joined. During the session out of 47, 9 Assistant Professors on contractual basis have resigned and 03 have expressed their unwillingness to continue their services in this University. Further, during the session 2014-15, 07 faculty members have been superannuated.

In view of above, at present the University has 119 faculty vacancy positions in the various disciplines and these vacancies have been calculated after merging the Professors, Associate Professors and Assistant Professors and these 119 faculty positions may be filled through Assistant Professor on contractual basis.

The discipline wise and category wise vacancy position are as under:-

| S. No | Discipline | UR | SC | ST | OBC | Total |
|---|---|---|---|---|---|---|
| 1 | Automobile Engineering | 2 | 2 | - | 3 | 7 |
| 2 | Bio Technology | 2 | - | 1 | 4 | 7 |
| 3 | Civil Engineering | 4 | - | - | 1 | 5 |
| 4 | Computer Engineering | 4 | 1 | - | 3 | 8 |
| 5 | Electrical & Electronics Engineering | 1 | 3 | - | 2 | 6 |
| 6 | Electrical Engineering | 3 | - | 1 | 4 | 8 |
| 7 | Electronics & Communication Engineering | 3 | 1 | - | 2 | 6 |
| 8 | Engineering Physics | - | 1 | 1 | 4 | 6 |
| 9 | Environmental Engineering | - | 2 | - | 1 | 3 |
| 10 | Information Technology | 2 | 1 | 3 | 4 | 10 |
| 11 | Mechanical Engineering | 2 | 2 | - | 4 | 8 |
| 12 | Polymer Science & Chemical Technology | 2 | 1 | 2 | 4 | 9 |
| 13 | Production Engineering | - | - | - | - | - |
| 14 | Software Engineering | 2 | 2 | - | 3 | 7 |
| 15 | Mechanical Engineering (Workshop) | 1 | - | - | - | 1 |
| 16 | Training & Placement | | | | 1 | 1 |
| 17 | Applied Chemistry | 2 | 1 | - | 1 | 4 |
| 18 | Applied Mathematics | 1 | 1 | 1 | 4 | 7 |
| 19 | Applied Physics | 2 | 2 | 2 | 5 | 11 |
| 20 | Humanities | 3 | 2 | - | - | 5 |
| | Total | 36 | 22 | 11 | 50 | 119 |

The above mentioned 119 vacancies may be filled on contractual basis. Being Academic affair/matter, the Hon'ble Vice Chancellor has approved the same in the capacity of the Chairman, Academic Council.

**Decision** : *The Academic Council ratified the above actions taken by the University with the following suggestion in respect of item no. 11.4(iii):*
*"In future, period against each candidate be mentioned".*

**Agenda 11.5** : **Discontinuation of Merit Scholarship to the toppers of each branch of M.Tech/MBA.**

It was submitted to the Academic Council that the University has instituted merit scholarship to the topper of each branch of 'Bachelor of Engineering', 'Bachelor of Technology', 'Master of Engineering', 'Master of Technology' and 'Master of Business Administration' offered by the Delhi Technological University after obtaining approval of the Board of Management, DTU in the year 2009. The scholarship is awarded strictly on the principle of academic merit of the candidate who satisfied the following conditions:

1. The student who has passed all the subjects of the semester in one attempt.
2. The student concerned has not secured less than 75% in the academic semester.
3. The student should have a sound moral character and should not have indulged into any act of misconduct during his/her studies at the university.

The merit scholarship shall be awarded to 02 top rankers of each program in each semester and the value of scholarship is as under:

1. The first top ranker shall be awarded merit scholarship of Rs.10000/- and a certificate of merit.
2. The second top ranker shall be awarded merit scholarship of Rs.5000/- and a certificate of merit.

The grant of such scholarship to the deserving students of each program cost the university amounting to Rs.6,60,000/- per semester as per calculation:
10000*(15+6+22+1)=4,40,000/-
5000*(15+6+22+1)=2,20,000/-

Since the grant-in aid from the Government is depleting and such a huge expenditure may not be justified for cases where student strength is very less in certain programs as compared to other programs where the strength is high.

Due to increased strength in the classes, the students in majority of B.Tech. programs are staggered in different sections and there is no guarantee that students are given equal opportunity during discourse of lectures in all subjects and in the coverage courses etc. in each section. It is therefore, seen that there do not exist any parity which decides academic performance in the program, rather than in each section.

Decision : *The Academic Council approved the proposal with following stipulations:*

i. *Merit scholarship shall be given only to the toppers of all branches of B.Tech program (F/T) annually with the condition that the student concerned has secured 75% or above as aggregate marks or CGPA >= 7.5 in an academic year.*

ii. *The student who has passed all the subjects of the semester in one attempt.*

iii. *The student should have a sound moral character and should not have indulged into any act of misconduct during his/her studies at the university.*

iv. *In case of tie, all awardees will be given Rs.5000/- each.*

v. *The revised policy shall be applicable from 2015-16 batch onwards.*

vi. *Para starting from "Due to increased strength ......... in each section" has been withdrawn as it has been written mistakenly.*

**Agenda 11.6 : Approval for Admission Policy of B.tech (Full Time) program for the academic year 2015-16.**

It was submitted to Academic Council that admission for B.Tech. (Full Time) course of the Delhi Technological University (DTU) for the Academic Session 2015-2016 are to be done ONLINE through Joint Admission Counselling (JAC) along with other Universities/Institute of Govt. of NCT of Delhi, viz. Netaji Subhas Institute of Technology (NSIT), Indira Gandhi Delhi Technical University for Women (IGDTUW), and Indraprastha Institute of Information Tehnology, Delhi (IIITD). The few changes made this year by JAC Committee are: (i) Inclusion of Transgender (ii) Inclusion of Dexlysia in PD category (iii) Change of Name of "Persons with Disabilities" To "Differently Abled Persons" (iv) Self attestation of documents.

The other things like seat matrix and eligibility criteria are same as that of the previous years. The details of admission procedure along with the seat matrix for B.Tech. admission 2015 was placed before the Academic Council.

**Admission Policy to B.Tech admission for FN/PIO/NRI through DASA**

It was submitted to the Academic Council that admission for B.Tech. (Full Time) course of the Delhi Technological University (DTU) for NRI/PIO/FN category for Academic Session 2015-2016 will be done ONLINE through **Direct Admission of Students Abroad (DASA)** along with other Universities/Institutes of Govt. of India/states/private coordinated by Malviya National Institute of Technology, Jaipur. The details of admission procedure along with the seat matrix for B.Tech. Admission-2015 for NRI/PIO/FN was placed before council.

**Admission Policy to B.Tech under sponsored category (2015-16)**

It was further submitted to the Academic Council that admission to B.Tech.(Full Time) under sponsored category at Delhi Technological University (DTU) for Academic Session 2015-2016 will be done through nominations received through Ministry of External Affairs/ Govt. of India/ AICTE.

*Note: Detailed brochure has been uploaded on the website of Joint Admission Committee (JAC).*

**Decision : *The Academic Council approved the Admission Policy for B.Tech (F/T) for the academic session 2015-16.***

**Agenda 11.7    :   Approval for Admission Policy of B.Tech (Eve.) program for the academic year 2015-16.**

It was submitted to the Academic Council that the university has been offering B. Tech (Evening) program in four disciplines of Electrical Engg, Electronics & Communication Engg, Mechanical Engg and Civil Engg with an intake of 45 each. The classes are held 6 days a week in the evening from 6.00 pm to 9.00 p.m. Admission to these programs are made on the basis of merit of the candidates in the Entrance Examination which will be held on 28-06-2015 (Sunday). This examination will consist of 02 papers. The first paper is common to all programs and the second paper is specific for each program. The only change made this year by B.Tech. Admission Committee is Discontinuation of B.Tech. (Information Technology) as per 10th Academic Council Decisions. The details of Admission procedure along with the seat matrix for B.Tech.(Evening) Admission 2015 is placed before council for its consideration and approval.

*Note: Detailed brochure has been uploaded on the website of Delhi Technological University.*

**Decision  : *The Academic Council approved the admission policy for B.Tech. (Eve.) for the academic year 2015-16.***

**Agenda 11.8** : **Approval of Admission Policy to B.Tech. (Lateral Entry) program during 2015-2016.**

It was submitted to the Academic Council that admission to B.Tech. (Lateral Entry) program at Delhi Technological University (DTU) for Academic Session 2015-2016 will be done through Merit/Screening Test Examination for admission to second year of the four year B.Tech. (Full Time) Degree Program in those branches, where admission were withdrawal/seats were lying vacant during admission of the session 2014-2015 after the final upgradation of the students.

The details of admission procedure along with the seat matrix for B.Tech. (Lateral Entry) program, 2015 was placed before the Council for its consideration and approval.

*Decision : The Academic Council approved the admission policy for B.Tech. (Lateral Entry) for the academic year 2015-16.*

**Agenda 11.9** : **Approval for Ph.D. Admission Policy 2015-16 (Eligibility, Screening Test, Seat Matrix, etc).**

It was submitted to the Academic Council that the following modus-operandi will be adopted for PhD admission 2015-16. Accordingly the information brochure for PhD admission is placed in Academic Council for approval before the commencement of process.

1. It is proposed to shortlist candidates for interviews on the basis of following criteria:

(a) Those candidates will be eligible who will secure minimum 30% for General and OBC and 20% for SC and ST category.

(b) Candidates will be called in 1:5 proportions to the available seats.

(c) Higher of the above two numbers {i.e. (a) and (b)} will control the list of eligible candidates who will be called for interview based on written test.

2. A maximum of 01 candidates per faculty (*depending upon availability of the eligible faculty as per PhD ordinance to act as supervisor*) under Part time category may also be admitted subject to fulfilling the condition at point No. 1(a) above.

3. Written test will be of 60 marks having 60 questions from entire spectrum of the department syllabus and 1½ Hr. duration along with interview weightage of 40 marks. Merit list will be prepared on the basis of 100 marks.

4. No married accommodation is available in the university and limited bachelor accommodation is available in the university.

5. No self supported candidates will be admitted against this call for admission.

6. Those candidates who have secured NET/ CSIR/ BARC or any other fellowship will be exempted from the written test in addition to the DTU/DCE faculty, regular employee of the organizations having MoU with DTU along with project staff of DTU(*as per PhD ordinance*).

Note: *Detailed brochure has been uploaded on the DTU admission website.*

**Decision : The Academic Council approved the Ph.D. Admission Policy for academic session 2015-16 with the following condition:**
**"The allocation of Ph.D. students should first be made to the eligible faculty who are not having any Ph.D. student registered with them".**

**Agenda 11.10 (a)  : Approval for B.Tech (Full Time) Teaching and Examination Scheme for batches 2015-16 onwards.**
**(b)   : Approval for Grading System for B.Tech (F/T) for batches 2015-16 onwards.**

It was submitted to the Academic Council that the University intends to bring certain changes in the existing Examination Scheme with a view to keep pace with the present day requirement in the changed scenario. The proposal regarding revision of Teaching and Examination Scheme for B.Tech (FT) program has already been discussed in the meeting of Deans and HODs, which have given their concurrence. Accordingly, Dean (Academic) has proposed a new Examination Scheme for B.Tech (FT) programs which should be applicable for 2015-16 batches onwards. Detail of scheme along with the other relevant features is placed as **Annexure at pages 3 to 93.**

**Decision  :  The Academic Council approved the Teaching and Examination Scheme and the Grading Scheme for B.Tech (FT) for batches 2015-16 onwards.**

**Agenda 11.11 (a)  : Approval for B.Tech (Eve.) Teaching and Examination Scheme for batches 2015-16 onwards.**
**(b)   : Approval for Grading System for B.Tech (eve.) for batches 2015-16 onwards.**

It was submitted to the Academic Council that the University has been running B.Tech (Eve) program in 04 disciplines (CE, ME, E & C, EE) for the benefit of working students. Their existing Examination Scheme has become obsolete in the present scenario. The proposal regarding revision of Teaching and Examination Scheme for (B.Tech (Eve.) program has already been discussed in the meeting of Deans and HODs, which have given their concurrence. Accordingly,

Dean (Academic) has now proposed a new Examination Scheme for B.Tech (Eve.) programs which should be applicable for 2015-16 batches onwards. Detail o scheme along with other relevant features is placed as *Annexure at pages 94 to 113.*

*Decision* : *The Academic Council approved the Teaching and Examination Scheme and the Grading Scheme for B.Tech (Eve.) for batches 2015-16 onwards.*

**Agenda 11.12** : **Approval for B.Tech (Full Time) Ordinance for batches 2015-16 onwards.**

It was submitted to the Academic Council that the existing Ordinance for B.Tech (FT) programs needs to be upgraded to meet the present day requirements of the students pursuing various B.Tech (FT) programs. With a view to bring more clarity coupled with transparency in dealing with day to day requirements it is proposed to revise the existing Ordinance in the interest of the students. The proposal regarding revision of Ordinance has already been discussed in the meeting of Deans and HODs, which have given their concurrence. Accordingly, Dean (Academic-UG) submitted a proposal of revised B.Tech (FT) Ordinance, which is placed as *Annexure at pages 114 to 122.*

*Decision* : *The Academic Council approved the B.Tech (F/T) Ordinance for batches 2015-16 onwards.*

**Agenda 11.13** : **Approval for B.Tech (Full Time) Regulations for batch 2015-16 onwards.**

It was submitted to the Academic Council that the Dean, (Academic) has proposed changes in the B.Tech. Regulations to be introduced from academic session 2015-16 onwards. As reported, this proposal was also widely discussed in the meeting of the Deans and HODs. Details of the revised Regulations are placed as *Annexure at pages 123 to 166.*

*Decision* : *The Academic Council approved the B.Tech (F/T) Regulations for batches 2015-16 onwards with minor change as below:*
*"The word 'Chairman, BOS' be replaced with 'HOD' wherever mentioned in the forms, given in the Annexures".*

**Agenda 11.14 : Approval for B.Tech (Eve.) Ordinance for batch 2015-16 onwards.**

It was submitted to the Academic Council that the existing Ordinance for B.Tech (Eve.) programs needs to be upgraded to meet the present day requirements of the students pursuing various B.Tech (Eve.) programs. With a view to bring more clarity coupled with transparency in dealing with day to day requirements it is proposed to revise the existing Ordinance in the interest of the students. The proposal regarding revision of Ordinance has already been discussed in the meeting of Deans and HODs, which have given their concurrence. Accordingly, Dean (Academic) submitted a proposal of revised B.Tech (Eve.) Ordinance, which is placed as *Annexure at pages 167 to 173.*

*Decision : The Academic Council approved the B.Tech (F/T) Ordinance for batches 2015-16 onwards.*

**Agenda 11.15 : Approval for B.Tech (Eve.) Regulations for batch 2015-16 onwards.**

It was submitted to the Academic Council that the Dean, (Academic-UG) has proposed changes in the Regulations for B.Tech (Eve.) program to be introduced from academic session 2015-16 onwards. As reported, this proposal was also widely discussed in the meeting of the Deans and HODs. Details of the revised Regulations are placed as *Annexure at pages 174 to 212.*

*Decision : The Academic Council approved the B.Tech (Eve.) Regulations for batches 2015-16 onwards.*

**Agenda 11.16 : Approval for 1st year syllabi of B.Tech (Full Time) program for the academic session 2015-16 .**

It was submitted to the Academic Council that the syllabus for 1st year B.Tech (FT) course proposed through new scheme of Examination to enable the students for learning in their respective areas of specialization. As reported, this proposal was also widely discussed in the meeting of the Deans and HODs.

*Decision : The Academic Council approved the syllabi for 1st year of B.Tech (F/T) programs for batches 2015-16 onwards.*

**Agenda 11.17** : **Approval for 1ˢᵗ year syllabi of B.Tech (Eve.) programs for the academic session 2015-16.**

It was submitted to the Academic Council that the syllabus for 1ˢᵗ year B.Tech (FT) course proposed through new scheme of Examination to enable the students for learning in their respective areas of specialization. As reported, this proposal was also widely discussed in the meeting of the Deans and HODs.

*Decision* : *The Academic Council approved the syllabi for 1ˢᵗ year of B.Tech (Eve.) programs for batches 2015-16 onwards.*

**Agenda 11.18** : **Approval for one time provision of supplementary exam for even/odd semester courses of all batches with effect from the current semester.**

It was submitted to the Academic Council that the University is finding great difficulty in handling the data of existing students in respect of back papers, re-mid semester examinations and other related data. The applicability of new provisions of supplementary examination was approved in the 10ᵗʰ Academic Council meeting held on 07-04-2015. It was proposed that this applicability of provision of supplementary examination be extended to all batches (existing and new batches) and for all the courses of even/odd semesters, w.e.f. academic year 2015-16 onwards.

Further, a one time provision for supplementary exam was placed before the academic council for clearing backlog courses (*end semester examinations*) where the students (*of all batches*) were declared failed in the subjects but their attendance was satisfactory in registered course(s) of current or previous semesters (*even/odd semester courses*) may be allowed to seek for Supplementary Examination (*whether or not appeared as back papers*) with effect from the current semester, so that examinations could be conducted in the vacations/within one month of the commencement of next semester.

Other conditions approved in the 10ᵗʰ academic council shall stand applicable, namely;

1. A student is eligible for only one attempt for Supplementary Examination in end semester examination of any course. No second chance will be given.
2. The student must apply within fifteen days of declaration of the result of that student obtaining an "F" grade/ less than 40% marks in the subject(s) or declared failed.
3. The student appearing in supplementary examination having scored 'F' grade or have been declared Fail in the subject can achieve 'D' grade or may be allowed to declared pass with 40% of marks only.

4. A supplementary examination may be offered by a faculty/ department on the recommendation of the Dean Academic UG/PG.

**Decision** : **The Academic Council approved the proposal with following stipulation:**

i. **The 4th condition to be replaced with the statement – "A formal request be made by the student through the recommendation of the HOD and to be finally approved by the concerned Dean, Academic".**

ii. **Dean, Academic-UG is requested to notify the details of supplementary examination for both Even and Odd semester Examination.**

iii. **This provision is not applicable to Ph.D. students.**


**Agenda 11.19** : **Approval of Modus-operandi for registration of courses in B.Tech, M.Tech, MBA and B.Tech(Evening).**

A sub-clause is proposed to be added in clause 8 of the following ordinances for degree programs leading to Bachelors' and Masters' degree(s) (as aforesaid) regarding registration process:

(i) Ordinance 1- for ordinance leading degree of Bachelors of Technology
(ii) Ordinance 2- for ordinance leading degree of Masters of Technology
(iii) Ordinance 3- for ordinance leading degree of Master of Business Administration
(iv) Ordinance 4- for ordinance leading degree of Bachelors of Technology(Evening)

The modus-operandi for streamlining the registration process in all semesters is proposed avoiding duplicity of efforts and to enable error free data generation. It is proposed that the registration process shall be completed in four steps.

**Step-1**: Student to fill the registration and examination form (*Manual/Online with print*) the code and name of the subject, and category (regular/backlog course) he/she is registering for the current semester alongwith other details requisite in format.

**Step-2**: Student to obtain the No-Dues certificate from the Accounts/Academic Department.

**Step-3**: Student to register each course with particular faculty member with whom he/she is required to register as per the mandate of Board of Studies/HoD of concerned department, by obtaining their signature on the format, and making entries in the list maintained by each faculty member registering the course.

**Step-4**: Student to report the Coordinator appointed by HOD for final stage of registration of student, which include verification of fees, students credentials, vetting of courses registered by the students (including back papers), issuing acknowledgement to student, etc.

Subsequent to such preparation of course-wise complete list of students (registered with their signatures), the same may be endorsed by respective HODs to concerned Dean Academic(UG/PG) in original, whereas, photocopies be retained for use in the department. Late registration, in case the list is not sent to respective academic section, shall be dealt by HODs in the similar way as detailed above with inclusion of late fee. Beyond the submissions of the original list, the HOD would record the registration of individual student (late registration) to respective Deans for inclusion in registration list. In such cases also the faculty shall register the student individually in the subject by putting signatures on their registration and examination forms.

*Decision : The Academic Council has withdrawn the agenda and authorized the Vice Chancellor to deliberate in consultation with Dean, Academic (UG & PG) and issue notification regarding Modus Operandi for registration of courses by the students.*

**Agenda 11.20 : Approval for applicability of new UFM Rules for all batches with effect from academic year 2015-16.**

It was submitted to the Academic Council that new UFM rules were got approved in 10th Academic Council meeting held on 07-04-2015. The examination branch has been finding difficulty in the interpretation of few clauses and intends to bring uniformity in the rules. Accordingly, it was proposed that the revised rules as already approved be made applicable for all batches (existing and new batches) w.e.f . academic year 2015-16 onwards.

*Decision : The Academic Council has withdrawn the agenda and decided to notify the same after deliberation in the next meeting.*

**Agenda 11.21 : Extending the provision of make-up examination approved in 10th Academic Council for End Semester Examinations all batches with effect from academic year 2015-16.**

It was submitted to the Academic Council that the request for extending the provision of make-up examination for Mid Semester examination was approved in 10th Academic Council meeting, to End Semester Examinations for all batches with effect from academic year 2015-16. (existing and new batches). It is imperative to mention that provisions of Make-up examination is only to be availed subject to the condition that the student is either hospitalized, his/her parents/real Brother/Sister/Spouse is in ICU or has been authorized by competent authority to represent the University.

*Decision : The Academic Council has withdrawn the agenda.*

**Agenda 11.22    :    Approval for Academic Calendar of the academic year 2015-16.**

## ACADEMIC CALENDAR FOR B.TECH 2015-16

### ODD SEMESTER

| | |
|---|---|
| 31.07.2015(Friday) | : Registration of continuing students for 3$^{rd}$, 5$^{th}$ and 7$^{th}$ Semester courses |
| 01.08.2015(Sat) | : Vice Chancellor's Address to newly admitted Students (Forenoon); |
| 01.08.2015(Sat) | : Registration of first year students (Afternoon); |
| 03.08.2015(Mon) | : Teaching starts for all classes. |

**MID Semester Examination: September 21-26, 2015(Monday-Saturday)**

| | |
|---|---|
| 28.09.2015(Mon) | : Mid term notification of shortage of attendance |
| 13.11.2015(Fri) | : Teaching ends for all classes; |
| 13.11.2015(Fri) | : Display of sessional marks and shortage of attendance |

**END Sem. Theory & Practical Examination: 16.11.2015(Monday) onwards**

| | |
|---|---|
| 05.12.2015(Sat) | : Winter Vacation, Workshop Training, Survey Camp, Industrial Training |

### EVEN SEMESTER

| | |
|---|---|
| 01.01.2016(Fri) | : Registration of all students; |
| 04.01.2016(Mon) | : Teaching starts for all classes |

**MID Semester Examination: March 14-19,2016 (Monday-Saturday)**

| | |
|---|---|
| 29.02.2015(Mon) | : Mid term notification of shortage of attendance |
| 06.05.2016(Fri) | : Teaching ends for all classes; |
| 06.05.2016(Fri) | : Display of sessional marks and shortage of attendance |

**End Sem. Theory & Practical Examination: 09.05.2016(Monday) onwards**

| | |
|---|---|
| 31.05.2016(Tue) | : Summer Vacation, Workshop Training, Industrial Training |
| 01.08.2016(Mon) | : University reopens after summer vacation |
| **1. Technical Fest** | **: to be decided later** |
| **2. Engifest** | **: to be decided later** |

*Decision : The Academic Council approved the Academic Calendar for the session 2015-16 as above.*

## Agenda 11.23 : Approval for Plagiarism Policy.

Quality of a research especially scientific is assessed on the basis of adequate evidence, while best results of the research are accomplished through scientific knowledge. Information contained in a scientific work must always be based on scientific evidence. Guidelines for genuine scientific research should be designed based on real results. The original work should have the proper data sources with clearly defined research goals, methods of operation which are acceptable for questions included in the study.

## NEED OF THE POLICY

Plagiarism adversely affects the prestige and esteem of the parent institution, in addition to cutting short a promising career of the individual concerned. It is for this reason that it is important for any academic institution to formulate a well defined policy for dealing with plagiarism and academic misconduct and to educate the academic community about this menace.

Often people indulge in the act of plagiarism unknowingly because of a lack of appreciation for what constitutes plagiarism. However, these excuses offer little protection against a charge of plagiarism.

Plagiarism can occur either unintentionally by poor academic practice, or it can happen when someone reproduces others work without acknowledgement

## OBJECTIVE OF THE PLAGIARISM POLICY

Nowadays the problem of plagiarism has become huge, or widespread and present in almost all spheres of human activity, particularly in science. The aim of plagiarism policy is

✓ To improve the quality of research,
✓ To achieve satisfactory results; and
✓ To compare the results of their own research, rather than copying the data from the results of other people's research.
✓ To establish rules and respect the rules of good practice

## Definition

1. The Oxford dictionary has described it as follows:
   Pla*giar*ize (BrE also –ise) verb (disapproving) to copy another person's ideas, words or work and pretend that they are your own.
2. As per hyper dictionary the word plagiarism has the following meaning(s)

(a) [n] the act of plagiarizing; taking someone's words or ideas as if they were your own.

(b) [n] a piece of writing that has been copied from someone else and is presented as being your own work.

3. According to the online dictionary (http://dictionary.reference.com) plagiarism is defined as; "an act or instance of using or closely imitating the language and thoughts of another author without authorization and the representation of that author's work as one's own, as by not crediting the original author".

4 According to online legal dictionary
(http://legaldictionary.thefreedictionary.com/plagiarism)

## Plagiarism is-

Taking the writings or literary concepts (a plot, characters, words) of anoth er and selling and/or publishing them as one's ownproduct. Quotes which are brief or are acknowledged as quotes do not constitute plagiarism. The actual author can bring alawsuit for appropriation of his/her work and against the plagiarist, and reco ver the profits. Normally plagiarism is not a crime,but it can be used as the basis of a fraud charge or copyright infringement, if prior creation can be proved.

## TYPES OF PLAGIARISM

➢ Direct form—Fully or partially copy the text, computer files, audio or video recordings without mentioning the primary source;
➢ Mosaic form—Borrowing ideas and opinions from the original source, a few words and phrases without citing the source;
➢ Self-plagiarism—Reuse own work without specifying the primary (own) sources.

**Turn it in,** the software presently being used by university as a tool for plagiarism detection provides the following acts as plagiarism

- **Remix Plagiarism** - Combining several slightly modified works, but without acknowledging the original creators or producing anything original.

- **Retweet Ctrl-C Plagiarism** - Copying and pasting information without any acknowledgement of the original author.

- **Error-404 Plagiarism** - Work with some missing or incomplete references, so the original sources can't be found.

- **Find-Replace Plagiarism** - Replacing a few pieces of information in a copied piece of work, to make it look like something new (but without actually being original).

- **Hybrid & Mashup Plagiarism** - Combining information from a few different sources, acknowledging original creators, but with no development of new ideas.

- **Recycle & Clone Plagiarism** - Reusing work that has been submitted before.

- **Plagiarism** - Copying existing information and referencing it, but without clearly identifying that it has been taken directly from another source.

## PREVENTION OF PLAGIARISM

Researchers and authors of scientific papers must follow the rules of the Ethics Code of Good Scientific Practice (GSP), primarily to follow the principles of honesty and integrity;

✓ Authors must properly cite relevant publications and cite facts and conclusions, or published or unpublished ideas and words of other researchers and authors. The reader should be clearly informed of the facts from the original texts of other authors, or of recycled articles from other sources;

✓ Authors should properly cite references in their original form (the author(s), article title, abbreviated journal title, year of publication, volume editions, number, initial and final page of the published article, or the other sources in accordance to the order prescribed);

✓ Authors should use the knowledge acquired in the lectures, conferences or other sources of scientific and technical literature, provided that each source must include full bibliographic information;

✓ Authors must cite each citation in the text indicated in the bibliography at the end of the text and put it in quotation marks copied the contents of which have more than six consecutive words;

✓ Authors must obtain permission from other authors or publishers of scientific reproduction of protected materials (texts, images, charts, graphs, etc.) copyright;

✓ If the author re-used text or attachment as another author's own observations, then published in the article, in quotation marks, should be accompanied by a quote of recycled text, published in the primary source;

✓ Authors and coauthors must sign a declaration of originality and authorship which provides descriptions of contribution by each of them separately in an article.

## OBLIGATIONS OF THE INSTITUTE AND THE ACADEMIC COMMUNITY

### Orientation Program

DTU shall make efforts to inculcate the spirit of academic integrity into students and faculty. The Dean, PG shall organize periodically workshops on 'Policy, Issues, Scope and Prevention of Plagiarism".

The institute should organize an orientation programme for all new entrants (for PhD and other students, respectively) at the beginning of the academic session to sensitize the students about the plagiarism issues and to make them aware of the institute policy on plagiarism.

This orientation programme shall necessarily touch upon the following issues:

➤ Explanation of plagiarism and ways to avoid an unintended act.
➤ An exposure to the elements of style in writing and referencing scholarly works
➤ Explanation of the institute policy on dealing with cases of plagiarism.
➤ Every member of the academic community (faculty members, scientists, academic staff and students) shall be provided a copy of the institute policy and guidelines on plagiarism.

## PLAGIARISM DETECTION PROCEDURE

The following procedure must be adhered to for submitting the plagiarism reports at the time of Ph.D/M.Tech thesis submission.

1. A Section in the library should be assigned exclusive duty to check the plagiarism
2. The Section will check all Ph.D/M.Tech theses for plagiarism detection by using either Turn it in or any other plagiarism detection software.
3. The Section will issue a report of plagiarism check called the Plagiarism Verification Report, certifying and authenticating the check performed by the student/Department.
4. The Report issued by the Section has to be submitted to the DRC to examine/evaluate the report from a plagiarism detection software tool and shall ascertain the level/extent of plagiarism, if any.
5. The DRC will issue a final certificate to be submitted with the thesis at the time of final submission.
6. All research students shall provide a declaration of the originality of the work being presented by them for evaluation. The relevant from shall have an additional column to show and confirm that the thesis is free from plagiarism.
7. A form/declaration shall be submitted by M. Tech. and other students, wherever applicable.
8. Similarly, all manuscripts submitted for possible publication should be analyzed by these software tools to ascertain that proper citations to original works are included. A copy of the report generated by the plagiarism software should invariably be submitted by the students with the paper to their supervisors.

## EXCLUSION
While performing plagiarism check the following would be excluded:
    a. Quotes
    b. Bibliography
    c. Phrases and Small matches up to 10 words
    d. Own published research paper

## SELF CITATION

Regarding Self Plagiarism or cases where published work of the student is shown as Plagiarism in the check, a certificate (Plagiarism Self Exclusion Certificate, attached) has to be issued by the Supervisor specifying and attaching the articles that have been published by the student from thesis work. Only these articles should be excluded from the check. No other article of the Supervisor or the student should be excluded from the check.

## PLAGIARISM REPORTING AND HANDLING

A complaint or charge of suspected case should be addressed to the Chairperson DRC. Alternatively, the specific complaints received by the Institute authority from external agencies may be referred to respective departments for a time-bound action (within 30 days). The DRC may on its own take cognizance of a suspected case.

In a situation mentioned above or warranted otherwise, a fact finding committee would be constituted by the Vice Chancellor, comprising of Chairperson, and two other faculty members, one from the concerned department the relevant area (other than the supervisor) and another from other department in the related area. The committee shall look into the case details and gather evidence in the form of reports from plagiarism detection software for the work in question as well as the previously published works of the concerned person in last five years, at least.

The committee shall submit its recommendation on whether the charge of plagiarism can be substantiated or not along with the documentary evidences including the report from plagiarism detection software, marked copies of publications, etc.

The recommendation shall be clearly specified in one of the following categories:

*The charge of plagiarism cannot be substantiated:* The similarity between documents is within the limits for putting some original results in proper context and all original sources are correctly cited. No further action is required.

*Low-level plagiarism:* Mostly it seems that the plagiarism is a result of negligence and intent to cheat is not clear. The student may be let off with counseling about plagiarism and allowed to resubmit the work within a defined time frame.

*Mid-level plagiarism*: Failure to cite proper references, copying a few paragraphs only from online sources (such as, Wikipedia, etc.). Intent to cheat is very low and may be due to lack of knowledge. The student may be allowed to resubmit the work within a defined time frame with an upper ceiling on the grade awarded.

*High-level Plagiarism*: Deliberate and planned attempt to copy the work done by someone else. Large amount of data taken from someone else's work, art work copying, source code copying etc. Intention to cheat is clear and can be substantiated. The student's programme may be terminated.

(The quantification of Plagiarism is left to the judgment and wisdom of the committee.)

The complaints of suspected plagiarism against an academic staff should be handled in the similar manner by a 3-member committee constituted by Vice Chancellor consisting of faculty members in the relevant area of specialization and one member from a different academic department.

The investigations should be taken up in right earnest and the report should be submitted within 30 days of the notification of the constitution of the committee.

The committee should examine all evidence on record and other supplementary sources and conclusively establish whether the charge of suspected plagiarism can be substantiated or not along with the documentary evidences. The minutes of the meetings of the committee should be maintained and included in the final report.

In case a member of the academic staff of the institute is found guilty of plagiarism then a suitable action for academic misconduct should be initiated.

**NOTE:** The quantification of Plagiarism is left to the judgment and wisdom of the committee.

The similarity in the M.Tech Dissertation/ Project up to 20% may be permitted and for Ph.D thesis similarity up to 15% may be permitted.

Excluded:    1. Bibliography
             2. Phrases and Small matches up to 10 words
             3. Own published research paper

*Decision  :  The Academic Council approved the Plagiarism Policy as above.*

**Agenda 11.24** : **Award of degree certificate to the successful students of Executive-MBA program.**

It was submitted to the Academic Council that the Executive-MBA (EMBA) program was introduce in 2013 and the first batch is passing out this year. It is a two year program and classes are conducted on weekends. The course structure, curriculum, credits and examination pattern of the program are almost similar to that of regular MBA program. EMBA students have submitted a representation showing their concern for expanded form of EMBA on their degree certificate "Executive Master of Business Administration". As per information collected from different sources, detail of degree certificates awarded by some of the institutions for similar kind of courses are given below:

| S. No. | Name of the institute | Duration | Mode of Delivery | Inscribing on the degree |
|---|---|---|---|---|
| 1. | FMS, Delhi University | Two years | $2^{1/2}$ hrs. class from Mon. to Friday and pre-noon classes on Saturday | Master of Business Administration (Executive) |
| 2. | University School of Management Studies, IP University | Two years | Weekend classes only | Master of Business Administration |

The matter was sent to the external members of the Board of Studies of the departments for their opinion. These members provided their input which is summarized as under:

The members advised to keep the degree certificate bearing generic "Master of Business Administration" like regular MBA program and emphasized that such a nomenclature will help to gain reputation quickly, become stable and build large alumni database, which will be vital in the long run.

Keeping in view the overall scheme of examination and credit structure, long term interest of the students coupled with recommendation of BOS members, it is proposed to inscribe *"Master of Business Administration (Executive)"* in the degree certificate for passing out EMBA students.

*Decision : The Academic Council approved the proposal.*

**Agenda 11.25** : **Approval of Norms for holding Symposium/Workshop/Seminar at DTU.**

It was submitted to the Academic Council that presently there is no provision in the university for providing the financial support to the departments for organising International / National Symposium/ Workshops/ Seminars at DTU.

In this connection a committee of the following officials were constituted;

1. Prof. Vipin, Mechanical, Production and Industrial Engg.
2. Dr. Mukhtiar Singh, Associate Prof., Electrical Engg.
3. Dr. Rishu Chaujar, Asstt. Prof. Applied Physics.

As per the report;

Organizing of Conferences/Seminars/Symposia/Workshop is an integral part of academic and research activities. This provides a platform to bring together academicians and experts from different parts of the country and abroad to exchange knowledge and ideas. In order to promote awareness as well as to provide exposure to state-of-the-art subjects in diverse areas of science and technology, the university aims to encourage the organizing of such Courses/Seminars/Symposia/Conferences/ Workshops of national and international repute. The university may also provide partial support/seed money for organizing such activities which will further help in building the brand image of the university as well as revenue generation.

**The financial and other infrastructural support shall be provided for hosting:**

1. Annual Conferences/Seminars/Symposia/Workshop of recognized academic/associations/professional bodies (e.g.IEEE, ASME, ASMW, ASCE, INSA, IETE etc.)*

2. Conferences/Seminars/Symposia/Workshop independently or jointly funded by Govt. Organizations (e.g. MHRD, DST, UGC, AICTE, DRDO, CSIR, NILET, MNRES etc.)*

3. There should be **Call for Papers and Delegate Participation** through academic and professional journals/website to have worldwide visibility/publicity of prospective presented papers.

**A letter from the academic association/academic body or academic/professional institution or association of business/industry, Govt. Organization as applicable, must be furnished with the application.**

**Norms for Financial and Infrastructural support:**

1. Maximum financial support/seed money of Rs. 1.50 lakh for International Conferences Seminars/symposia/workshops of minimum two days duration and Rs. 1.0 lakh for one day event.
2. Maximum financial support/seed money of Rs. 1.0 lakh for national Conferences Seminars/symposia/workshopsof minimum two days duration and Rs. 60,000/- for one day event.
3. Auditorium/Smart Class Rooms/Seminar Hall and guest house facility shall be made available on advanced request.

Full Profit shall be deposited to the University in case of independently organized events. However, in case of jointly organized events, the profit/loss may be shared

among the various organizing academic/professional bodies in proportion to their contribution towards financial support/seed money, as per signed MOU.

**The grant may be used for the following items:**

1. Travelling allowance (within India) as per university norms and honorarium (Rs. 3000/- per day) for Resource Persons from all over India. The accommodation may also be provided as per availability.
2. For resource person from abroad, the travelling allowance from port of entry in India shall be admissible with honorarium (Rs. 3000/- per day). However, an accommodation with maximum ceiling of Rs. 5000/- per day shall be admissible for such delegates.
3. Pre-conferences printing (Announcements, abstracts, etc.).
4. Publication of Proceedings.
5. Local hospitality, including boarding and lodging.

**Processing of Application:**

1. For organizing any Courses/Seminars/Symposia/Conferences/Workshops request has to be routed through HoD to Dean IRD who may obtain necessary approval of the Hon'ble Vice Chancellor.
2. Vice Chancellor may permit opening of a separate bank account in the name of the conference event, which will be jointly operated by the three organizer(s) and cheques can be signed by any two. The registration fee and sponsorship amount received from various agencies should be deposited in the same account. Such accounts must be closed within six months of completion of the event. The account should be audited by the university designated person before closing. The responsibility of operating the account, fulfilling the tax obligations, etc. rests entirely with the Organizers-the university is only a facilitator.

*Decision : The Academic Council approved the proposal.*


**Agenda 11.26   :   Evaluation of M.Tech/ Major Project-II/ Thesis Dissertation.**

In partial modification of **Clause 16(b)C, of the Ordinance 2** relating to postgraduate programs leading to Master of Technology(M.Tech Degree), and **Clause 16(b)C, of the Ordinance 3** relating to postgraduate programs leading to Master of Business Administration (MBA Degree) which provides the flexibility in defining the distribution of weightage of the components of examination other than defined in Clause 16(b) A & B, of the Ordinance 2 and Ordinance3, as per the prescription of BoS of the concerned department and approval of Academic Council/Vice Chancellor, following is proposed:

1. In both the aforesaid Ordinances a sub clause as per following details may be inserted and may be named as Clause 16(b)C, of the Ordinance-2 and Ordinance-3 respectively.

**16(b)C** : Major Project II/ Thesis Dissertation:
        (i) Continuous Evaluation  : 400 marks
-     Supervisor (s)     : 250 marks
-     Coordinator      : 150 Marks

        *(Expert from within the department appointed by BoS)*
        (ii) End Semester- Viva Voce Examination: 600 marks
        *(A panel consisting of Supervisor(s), Coordinator & External Expert(s) appointed by Vice Chancellor)*

2. The original Sub-Clause **16(b)C**, of the Ordinance 2 and Ordinance 3 shall become **16(b)D**, which shall continue to provide the flexibility in defining the distribution of weightage of the components of examination pertaining to Minor Project-I & II and Major Project-I.

**Decision** : *The Academic Council approved the proposal with following conditions:*
    *i. There will be 01 coordinator each in the major discipline in the department to maintain the uniformity.*
    *ii. The above system shall be applicable for batches 2014-15 onwards.*

**Agenda 11.27** : **Any other matter with the permission of the Chair.**

The following Supplementary Agenda was also discussed in the meeting:

**Supplementary Agenda 1** : **Honorarium for Evaluation of PhD Thesis Dissertation- Foreign Examiner**

It was submitted to Academic Council that the honorarium for evaluation of PhD thesis by Foreign Examiner is yet to be approved by the University. IIT Delhi, IIT Roorkee, NIT Kurukshetra, NIT Tiruchirappali, NIT Calicut have been contacted in this regards. The current rates of honorarium for such purpose are:

IIT Delhi- 500 US$
IIT Roorkee: 300US$
NIT Kurukshetra: 200US$
NIT Tiruchirappalli: 200US$
NIT Calicut: 500 US$

It was proposed before the Academic Council that 200US$, as honorarium to foreign examiner may be approved for our University.

**Decision** : *The Academic Council approved the proposal for grant of 200 US$ as honorarium to the Foreign Examiner.*

The meeting ended with a vote of thanks to Chair.

The minutes are issued with the approval of the Chairman for circulation to Hon'ble Members.

Col. Neeraj Suri (Retd.)
Registrar

Copy to : | 4697 - 4713

1. Pr. Secretary to Hon'ble Lt. Governor (Delhi), Raj Niwas, Civil Lines, Delhi.
2. S.O. to Vice Chancellor, DTU
3. Prof. S. K. Jain, Vice Chancellor, Mata Vaishno Devi University, Katra, J & K - 182320
4. Mr. O. P. Bhutani, B-86, Surajmal Vihar, New Delhi-110092.
5. Prof. C.R. Babu, Professor Emiritus, Former Pro Vice Chancellor, University of Delhi-110007
6. Prof. Vir Singh (Nominee from UGC), Department of Physics, IIT, Roorkee, Uttarakhand-247667
7. Prof. B. J. Alappat (Nominee from AICTE), Department of Civil Engg., IIT, Hauz Khas , New Delhi-110016
8. Mr. Sanjeev Kumar Gupta (Nominee from FICCI), Managing Director (Corporate Affairs) M/S Accenture Services Pvt. Ltd., 7th Floor, Tower-C, Building No. 8, DLF Cyber City, Phase-II, Gurgaon-122002.
9. Prof. S. K. Garg, Pro Vice Chancellor, DTU
10. All Deans & HODs, DTU
11. Prof. Pragati Kumar, Electrical Engg. Deptt., DTU
12. Dr. A. K. Madan, Associate Prof., Mech. Deptt.
13. Dr. M. S. Ranganathan, Assistant Prof., Mech. Deptt.
14. Sh. R. K. Shukla, Librarian
15. Controller of Examination, DTU
16. Dy. Registrar, Accounts, DTU
17. Col. Neeraj Suri (Retd.), Registrar, DTU

Col. Neeraj Suri (Retd.)
Registrar

# ANNEXURE

## For

## Minutes of 11$^{th}$ Meeting Academic Council, DTU

## 24-06-2015

Established under Govt. of Delhi Act 6 of 2009

*ANNEXURE I*

(Formerly Delhi College of Engineering)

BAWANA ROAD, SHAHBAD DAULATPUR, DELHI-42

No. F.6 (161)/Exam Cell/RS/Duration- Practical exam / 3163 - 72                29.04.2015

## NOTIFICATION

I am directed to convey the approval of the Competent Authority regarding modus operandi for appointment of examiners, schedule of practical examination and conduct of practical examination from even semester 2014-15 and onwards in line with the decision in the 10th Academic Council meeting dealing with examination system reforms.

a)  There will be no external examiner for practical examination. Only the concerned faculty member who has conducted/engaged the practical classes throughout the semester shall act as examiner for that section of a class of students in the end-semester examination of practical course. In case the practical classes were engaged by the Guest Faculty or Ph. D scholar of the university, a substitute examiner shall be proposed by HODs, duly approved by HOD of the concerned Department.

b)  The practical examination of 3 hours may be conducted in two stages. Since the practical classes are in general conducted for two hours duration the experimental part of the practical examination be conducted in two hours and the remaining one hour may be allocated for post experiment assessment (viva-voce) and pre-experiment assessment of the student which includes writing of details of experiment, basic theory and expected results etc. On case to case basis the examiner may decide allocation of 1 hour time in pre experiment assessment and post experiment assignment (viva-voce). It is needless to say that both pre-experiment assessment and post experiment assessment do not require the availability of the concerned lab.

c)  The schedule of practical examination for day and time shall exactly be the same as that of the time table followed in the concerned semester, which automatically paves the way for clash free schedule both in terms of availability of the Lab and in terms of technical staff and faculty members, and enable faster (five days) and smoother conduct of practical examination without any turbulence.

All HODs are requested to suggest the examiners in time table format for each batch and section of students to the Controller of Examination for doing the codal formalities in appointment of examiners and notifying the schedule.

Col. Neeraj Suri(Retd)
Registrar

cc:
1)  PS to V C for kind information of Hon'ble Vice Chancellor.
2)  PS to Pro Vice Chancellor.
3)  All Deans.
4)  All HOD's.
5)  Controller of Examination.
6)  Asst. Registrar- Academic- (UG & PG).
7)  Notice Board – DTU
8)  OIC, B.Tech (evening)
9)  Head, C.C :- with request to upload this same on the University website.
10) Shri S.K. Khanna, Consultant.

Col. Neeraj Suri(Retd)
Registrar

- 1 -

# List of Ph.D Scholars

| S.No. | Name | Supervisior & Co-Supervisior | Roll-No | Department | Date of Re |
|---|---|---|---|---|---|
| 1. | Milan Srivastava | Dr. Chandra Prakash Singh | 2K13/Ph.D/AM/02 | Applied mathamatics | 28/01/15 |
| 2. | Anurag Tiruwa | Prof. P. K. Suri | 2K13/Ph.D/DSM/03 | Managment | 27/01/15 |
| 3. | Rajesh Kumar | Dr. S. Maji<br>Dr. B. D. Pant | 2K11/Ph.D/ME/04 | Mechanical Engg | 24/09/13 |
| 4. | Jyoti Pokhariyal | Dr. (Mrs.) Anubha Mandal<br>Dr. Shankar G. Aggarwal | 2K12/Ph.D/ENV/07 | Enviormental Engg | 19/02/15 |
| 5. | Anjali Singh | Dr. Anjana Gupta | 2K13/Ph.D/AM/03 | Applied Mathematics | 08/04/15 |
| 6. | Ranjeet Kumar | Dr. M Rizwan | 2K11/Ph.D/EE/06 | Electrical Engg | 26/08/14 |
| 7. | Bhavnesh Jaint | Dr. S. Indu<br>&<br>Dr. N Panday | 2K12/Ph.D/EE/07 | Electrical Engg | 11/03/15 |
| 8. | Mamta Sahu | Dr. Anjana Gupta | 2K13/Ph.D/AM/01 | Applied Mathematics | 08/04/15 |
| 9. | Devesh Kumar | Dr. B.B. Arora | 2K12/Ph.D/ME/11 | Mechanical Engg | 23/02/15 |
| 10. | Tarundeep Gill | Prof. S. K. Singh<br>&<br>Dr. A. K. Haritash | 2K13/Ph.D/ENV/01 | Environmental Engg | 20/04/15 |
| 11. | Anchal Gupta | Prof. P. K. Suri<br>&<br>Prof. R. K.Singh | 2K13/Ph.D/DSM/08 | D.S.M | 15/04/15 |
| 12. | Anunay Gour | Prof. S. K. Singh<br>&<br>Dr. Anubha. Mandal | 2K12/Ph.D/EN/03 | Environmental Engg | 13/05/15 |
| 13 | Neha Gupta | Prof. S. C. Sharma | 2K14/Ph.D/AP/03 | Applied Physics | 23/05/15 |
| 14. | Jaya Madan | Dr. Rishu Chaujar | 2K13/Ph.D/AP/02 | Applied Physics | 26/05/15 |
| 15. | Kavita Rani | Prof. S. C. Sharma | 2K14/Ph.D/AP/05 | Applied Physics | 23/05/15 |
| 16. | Jyotsna Panwar | Prof. S. C.Sharma<br>&<br>Dr. Rinku Sharma | 2K14/Ph.D/AP/02 | Applied Physics | 23/05/15 |
| 17. | Rahul Pandey | Dr. Rishu Chaujar | 2K13/Ph.D/AP/04 | Applied Physics | 26/05/15 |

# Teaching & Examination Schemes
## B. Tech. PROGRAMS

## DEPARTMENT OF BIOTECHNOLOGY
## BACHELOR OF TECHNOLOGY (BIOTECHNOLOGY)

### I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | 16 | 1 | 7 | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | 15 | 1 | 9 | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | RE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **Group A** | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |
| | | | | | | | | **Group B** | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | MA251 | Applied Mathematics | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | BT201 | Introduction to Biotechnology | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | BT203 | Biochemistry | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | BT205 | Chemical Engineering Principles | DCC | 4 | 3 | 0 | 2 | 0 | 3 | 15 | 25 | 20 | 40 | - |
| 5. | BT207 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | CO252 | Data Structure and Algorithm | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 2. | BT202 | Molecular Biology | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | BT204 | Genetics | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 4. | BT206 | Microbiology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | BT208 | Structural Biology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | MG202 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | BT 301 | Immunology and Immuno-Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | BT 303 | Genetic Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | BT 3xx | Departmental Elective Course- 1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 4. | BT3xx | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Professional Ethics and Human Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | BT302 | Plant Biotechnology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | BT304 | Animal Biotechnology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | BT306 | Genomics and Proteomics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | BT3xx | Departmental Elective Course- 3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 5. | BT3xx | Departmental Elective Course- 4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 6. | HU302 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | - |
| 7. | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | BT 401 | B.Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | BT 403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | BT 405 | Fundamental of Computational Biology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | BT 407 | Bioprocess Tech & Downstream Process | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | BT4xx | Departmental Elective Course- 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | - |
| 6. | BT4xx | Departmental Elective Course- 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: ~~Odd~~ Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | BT402 | B.Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | BT404 | Advances in Computational Biology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | BT4xx | Departmental Elective Course- 7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 4. | BT4xx | Departmental Elective Course- 8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | - |
| | | Total | | 20 | | | | | | | | | | |

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# List of Departmental Elective Courses

| S. No. | Elective Code | Title of Elective | Elective no. |
|--------|---------------|-------------------|--------------|
| 1. | BT-305 | Instrumentation in Biotechnology | DEC 1 & 2 |
| 2. | BT-307 | Food Biotechnology | |
| 3. | BT-309 | Object oriented Programing | |
| 4. | BT-311 | Introduction to Biomedical Engineering | |
| 5. | BT-313 | Thermodynamics of Biological System | |
| 6. | BT-315 | Current topics in Biotechnology | |
| 7. | BT-317 | Enzyme and Enzyme Technology | |
| 8. | BT-319 | Drug Design and Delivery | |
| 9. | BT-321 | Bioprocess Plant Design | |
| 10. | BT-323 | Population Genetics | |
| 11. | BT-308 | Stem Cells and Regenerative Medicine | DEC 3 & 4 |
| 12. | BT-310 | Biopolymers | |
| 13. | BT-312 | Metabolic Engineering | |
| 14. | BT-314 | Ecology and Evolution | |
| 15. | BT-316 | Transgenic Technology | |
| 16. | BT-318 | Bioenergy and Biofuels | |
| 17. | BT-320 | Genomics in Medicine | |
| 18. | BT-322 | Protein Engineering | |
| 19. | BT-324 | Biodiversity and Bioresource Planning | |
| 20. | BT-326 | Medical Microbiology | |
| 21. | BT-409 | Concepts in Neurobiology | DEC 5 & 6 |
| 22. | BT-411 | Industrial Biotechnology | |
| 23. | BT-413 | Nanobiotechnology | |
| 24. | BT-415 | Medical Physics | |
| 25. | BT-417 | Plant Bioinformatics | |
| 26. | BT-419 | Cancer Biology | |
| 27. | BT-421 | Pharmacogenomics and Personalized Medicine | |
| 28. | BT-423 | Technological Application in Food Technology | |
| 29. | BT-425 | Biomaterials | |
| 30. | BT-427 | Pharmaceutical Sciences | |
| 31. | BT-406 | Agriculture Microbiology | DEC 7 & 8 |
| 32. | BT-408 | Bioethics and Intellectual Property Rights | |
| 33. | BT-410 | System Biology | |
| 34. | BT-412 | Advanced Bioanalytical Techniques | |
| 35. | BT-414 | Clinical Biotechnology | |
| 36. | BT-416 | Plant Metabolic Engineering | |
| 37. | BT-418 | Crop protection and Pest management | |
| 38. | BT-420 | Biosensor | |
| 39. | BT-422 | Green Energy Technology | |
| 40. | BT-424 | Neutraceuticals | |

# DEPARTMENT OF CIVIL ENGINEERING
# BACHELOR OF TECHNOLOGY
# (CIVIL ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Teaching Scheme** | | | **Contact Hours/Week** | **Exam Duration** | | **Relative Weights (%)** | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | ~0 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EC251 | Basic Electronics & Instrumentation | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CE201 | Civil Engineering Basics and Applications | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CE203 | Engineering Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CE205 | Fluid Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | CE207 | Engineering Analysis and Design | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | MG203 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EN252 | Environmental Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CE202 | Mechanics of solids | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CE204 | Engineering Survey | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CE206 | Soil Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | CE208 | Hydraulics & Hydraulic Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | CE301 | Analysis of Determinate Structures | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CE303 | Design of RCC structures | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CE3xx | Departmental Elective Course-1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 4. | CE3xx | Departmental Elective Course-2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | CE302 | Analysis of Indeterminate Structures | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | CE304 | Geotechnical Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CE306 | Transportation Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CE3xx | Departmental Elective Course-3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 5. | CE3xx | Departmental Elective Course-4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 6. | HU302 | Professional Ethics and Human values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | CE401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | CE403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | CE405 | Design of Steel Structures | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CE407 | Water Resources Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | CE4xx | Departmental Elective Course-5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 6. | CE4xx | Departmental Elective Course-6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | CE402 | B.Tech. Project-II | DCC | 8 | | | | | | | | | | |
| 2. | CE404 | Construction Technology & Management | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | CE4xx | Departmental Elective Course-7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | CE4xx | Departmental Elective Course-8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.No. | Subject Code | Subject | Elective NO. |
|---|---|---|---|
| 1. | CE305 | Mechanics of Materials | DEC-1 |
| 2. | CE307 | Advanced geo-technical engineering | |
| 3. | CE309 | Environmental Engineering Design | |
| 4. | CE311 | Photogrammetry and astronomy | |
| 5. | CE313 | Earthquake Technology | DEC-2 |
| 6. | CE315 | Rock engineering | |
| 7. | CE317 | Solid Waste Management & Air Pollution Control | |
| 8. | CE319 | Application of geo-informatics remote sensing and GIS in engineering | |
| 9. | CE308 | Disaster Management | DEC-3 |
| 10. | CE310 | Geo-technical processes | |
| 11. | CE312 | Water Power Systems & Design | |
| 12. | CE314 | Tunnel, ports and harbor engineering | |
| 13. | CE316 | Matrix methods of structural analysis | DEC-4 |
| 14. | CE318 | Analysis & Design of Underground Structures | |
| 15. | CE320 | Computational Hydraulics | |
| 16. | CE322 | Traffic and transportation planning | |
| 17. | CE409 | Advanced design of concrete structures | DEC-5 |
| 18. | CE411 | Interaction behavior of soil structure | |
| 19. | CE413 | Water Resources Management | |
| 20. | CE415 | Transportation safety and environment | |
| 21. | CE417 | Finite element method for 2-D structures | DEC-6 |
| 22. | CE419 | Soil Dynamics | |
| 23. | CE421 | Hydraulic structures and flood control works | |
| 24. | CE423 | Advanced transportation engineering | |
| 25. | CE406 | Advanced design of steel structures | DEC-7 |
| 26. | CE408 | Computational Geo-mechanics | |
| 27. | CE410 | Advanced Fluid Mechanics | |
| 28. | CE412 | Construction and design aspects in transportation engineering | |
| 29. | CE414 | Design of bridges | DEC-8 |
| 30. | CE416 | Geo-environmental and geo-hazard engineering | |
| 31. | CE418 | Ground water and seepage | |
| 32. | CE420 | Traffic Engineering | |

# DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

# BACHELOR OF TECHNOLOGY (COMPUTER ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Teaching Scheme** | | | | Contact Hours/Week | | Exam Duration (h) | | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|--------|-------------|--------------|--------------|--------|---|---|---|--------|-----------|-----|-----|-----|-----|-----|
| | | | | | Teaching Scheme | Contact Hours/Week | | Exam Duration | | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 5 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |

## II Year:   Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EC261 | Analog Electronics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CO201 | Data Structures | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CO203 | Object Oriented Programming | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CO205 | Discrete Structures | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5. | CO207 | (Modelling and Simulation) Engineering Analysis and Design | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EC262 | Digital Electronics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CO202 | Database Management Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CO204 | Operating Systems Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CO206 | Computer Organization and Architecture | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5. | CO208 | Algorithm Design and Analysis | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | MG202 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | CO301 | Software Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CO303 | Computer Networks | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CO3xx | Department Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | CO3xx | Department Elective Course -2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Professional Ethics and Human values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | --- |
| | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | CO302 | Artificial Intelligence | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | CO304 | Information and Network Security | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CO306 | Theory of Computation | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 4. | CO3xx | Department Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | CO3xx | Department Elective Course -4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 6. | HU302 | Technical Communication | HMC | 2 | 0 | 0 | 3 | 0 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year:Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|----|----|------|------|------|------|-----|
| 1. | CO401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | CO403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | CO405 | Compiler Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | CO407 | Image Processing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | CO4xx | Department Elective Course -5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 6. | CO4xx | Department Elective Course -6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | | | 22 | | | | | | | | | | |

## IV Year:Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|----|----|------|------|------|------|-----|
| 1. | CO402 | B.Tech. Project-II | DCC | 8 | | | | | | | | | | |
| 2. | CO404 | Data-Warehousing and Data Mining | DCC | 4 | 3 | 0 | 2/1 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | CO4xx | Department Elective Course -7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | CO4xx | Department Elective Course -8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.No | Subject Code | Subject | Elective no. |
|---|---|---|---|
| 1. | CO-305 | Information Theory and coding | DEC-1, 2 |
| 2. | CO-307 | Digital Signal Processing | |
| 3. | CO-309 | Advanced Data Structures | |
| 4. | CO-311 | Microprocessors and Interfacing | |
| 5. | CO-313 | Computer Graphics | |
| 6. | CO-315 | Optimization Techniques | |
| 7. | CO-317 | Soft Computing | |
| 8. | CO-319 | Telecommunication Engineering Fundamentals | |
| 9. | CO-321 | Embedded Systems | |
| 10. | CO-323 | Data Compression | |
| 11. | CO-308 | Parallel Algorithms | DEC-3, 4 |
| 12. | CO-310 | Distributed Systems | |
| 13. | CO-312 | Communications Engineering | |
| 14. | CO-314 | Optical Networks | |
| 15. | CO-316 | High Speed Networks | |
| 16. | CO-318 | Advanced Database Management Systems | |
| 17. | CO-320 | Multimedia System Design | |
| 18. | CO-322 | Real Time System | |
| 19. | CO-324 | Genetic Algorithms and Machine Learning | |
| 20. | CO-326 | Object Oriented Software Engineering | |
| 21. | CO-409 | Robotics | DEC-5, 6 |
| 22. | CO-411 | Computer Vision | |
| 23. | CO-413 | VLSI Design | |
| 24. | CO-415 | Wireless and Mobile Computing | |
| 25. | CO-417 | Software Project Management | |
| 26. | CO-419 | High Performance Computing | |
| 27. | CO-421 | Grid and Cluster Computing | |
| 28. | CO-423 | Swarm Optimization & Evolutionary Computing | |
| 29. | CO-425 | Pattern Recognition | |
| 30. | CO-427 | Web Technology and Java Programming | |
| 31. | CO-406 | Parallel Computer Architecture | DEC-7 and DEC-8 |
| 32. | CO-408 | Intellectual Property Rights | |
| 33. | CO-410 | Bio Informatics | |
| 34. | CO-412 | Software Quality and Testing | |
| 35. | CO-414 | Big Data Analytics | |
| 36. | CO-416 | Cloud Computing | |
| 37. | CO-418 | Natural Language Processing | |
| 38. | CO-420 | Cyber Forensics | |
| 39. | CO-422 | Semantic Web and Web Mining | |
| 40. | CO-424 | Software Metrics and Software Project Management | |

# DEPARTMENT OF ELECTRICAL ENGINEERING

# BACHELOR OF TECHNOLOGY (ELECTRICAL ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| Group A | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |
| Group B | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |

# I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Teaching Scheme | | | Contact Hours/Week | | Exam Duration | | Relative Weights (%) | | |
| | | | | | | | | | | | | | | |

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | MA261 | Numerical and Engineering Optimization Methods | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | EE201 | Network Analysis & Synthesis | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | EE203 | Electronic Devices and Circuits | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EE205 | Electromechanical Energy Conversion and Transformer | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EE207 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | ME252 | Power Plant Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EE202 | Electromagnetic Field Theory | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | EE204 | Digital circuits and System | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 4. | EE206 | Control Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EE208 | Asynchronous and Synchronous Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | MG202 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EE301 | Power Electronics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EE303 | Power Transmission and Distribution | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EExxx | Departmental Elective Course- 1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 4. | EExxx | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | - |
| 5. | UE- | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Professional Ethics and Human Values | HMC | 2 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | | 21 | | | | | | | | | |

## III Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EE302 | Electric Drives | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EE304 | Power System Analysis | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EE306 | Microcontrollers & Applications | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EEXXX | Departmental Elective Course- 3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 5. | EEXXX | Departmental Elective Course- 4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| 6. | HU302 | Technical Communication | HMC | 2 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | | 22 | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EE401 | B.Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | EE403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | EE405 | Digital Signal Processing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EE407 | Instrumentation and Measurement | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EE409 | Switchgear and Protection | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | EE4xx | Departmental Elective Course- 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year:Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EE402 | B.Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | EE4xx | Departmental Elective Course-6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | |
| 3. | EE4xx | Departmental Elective Course-7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | |
| 4. | EE4xx | Departmental Elective Course- 8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S. No. | Elective Code | Title of Elective | Elective no. |
|---|---|---|---|
| 1. | EE-305 | Signals and Systems | DEC 1 and DEC 2 |
| 2. | EE-307 | Power Station Practices | |
| 3. | EE-309 | Special Electrical Machines | |
| 4. | EE-311 | Energy Efficient Motors | |
| 5. | EE-313 | Linear Integrated Circuits | |
| 6. | EE-315 | Digital Control and State Variable Analysis | |
| 7. | EE-317 | Communication Systems | |
| 8. | EE-319 | Digital System Design | |
| 9. | EE-321 | Soft Computing Techniques | |
| 10. | EE-323 | Microcontroller and Embedded Systems | |
| 11. | EE-308 | Power System Operation and Control | DEC 3 and DEC 4 |
| 12. | EE-310 | Renewable Energy Systems | |
| 13. | EE-312 | Power System Optimization | |
| 14. | EE-314 | Power Electronic Applications to Power Systems | |
| 15. | EE-316 | Electrical Energy Storage Systems | |
| 16. | EE-318 | Switched Mode Power Supplies | |
| 17. | EE-320 | VLSI Design | |
| 18. | EE-322 | IC Technology | |
| 19. | EE-324 | Data Communication and Computer Networks | |
| 20. | EE-326 | CMOS Analog Integrated Circuits | |
| 21. | EE-411 | Design, Estimation & Costing of Industrial Electrical Systems | DEC 5 |
| 22. | EE-413 | Power System Modeling & Simulation | |
| 23. | EE-415 | Power System Reliability | |
| 24. | EE-417 | Design of Electrical Machines | |
| 25. | EE-419 | Advanced Topics in Electrical Machines | |
| 26. | EE-421 | Pulse Width Modulation for Power converters | |
| 27. | EE-423 | AI and Expert Systems | |
| 28. | EE-425 | Advanced Analog Circuit Design | |
| 29. | EE-427 | Computer Architecture | |
| 30. | EE-404 | Power System Dynamics & Stability | DEC 6, DEC 7 and DEC 8 |
| 31. | EE-406 | Distribution Systems Analysis & Control | |
| 32. | EE-408 | Restructured Power Systems | |
| 33. | EE-410 | Power System Planning | |
| 34. | EE-412 | High Voltage Engineering | |
| 35. | EE-414 | Distributed Generation | |
| 36. | EE-416 | Grid Integration of Renewable Energy Sources | |
| 37. | EE-418 | Selected Topics in Power Electronics | |
| 38. | EE-420 | Power Quality | |
| 39. | EE-422 | HVDC Transmission | |
| 40. | EE-424 | Flexible AC Transmission Systems | |
| 41. | EE-426 | Smart Grid | |
| 42. | EE-428 | Digital Image Processing | |
| 43. | EE-430 | Process Instrumentation & Control | |
| 44. | EE-432 | Filter Design | |
| 45. | EE-434 | Advanced Communications | |
| 46. | EE-436 | Computer Control of Processes | |
| 47. | EE-438 | Microcontroller & Embedded Systems | |
| 48. | EE-440 | DSP Applications to Electromechanical Systems | |
| 49. | EE-442 | SCADA & Energy Management Systems | |
| 50. | EE-444 | Robotics and Machine Vision | |
| 51. | EE-446 | Utilization of Electrical Energy & Traction | |

# DEPARTMENT OF ELECTRICAL ENGINEERING

# BACHELOR OF TECHNOLOGY (ELECTRICAL & ELECTRONICS ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Teaching Scheme | | | Contact Hours/Week | | Exam Duration | | Relative Weights (%) | | |
| | | **Group A** | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | 21 | 15 | 1 | 9 | | | | | | | |
| | | **Group B** | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|----|-----|-----|-----|-----|
| 1. | MA251 | Numerical and Engineering Optimization Methods | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | EL201 | Circuits and Systems | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | EL203 | Electronic Devices and Circuits | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EL205 | Electromechanical Energy Conversion and Transformer | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EL207 | Engineering Analysis and Design | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|----|-----|-----|-----|-----|
| 1. | EE252 | Introduction to Electromagnetics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | EL202 | Linear Integrated Circuits | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EL204 | Digital circuits and System | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EL206 | Control Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EL208 | Asynchronous and Synchronous Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | MG202 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EL301 | Power Electronics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EL303 | Power Transmission and Distribution | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EL3xx | Departmental Elective Course- 1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | EL3xx | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| 6. | HU301 | Professional Ethics and Human Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EL302 | Communication Systems-I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EL304 | Power System Analysis | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EL306 | Microcontrollers & Applications | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EL3xx | Departmental Elective Course- 3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | EL3xx | Departmental Elective Course- 4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | HU302 | Technical Communication | HMC | 2 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| 7. | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EL401 | B.Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | EL403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | EL405 | Digital Signal Processing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EL407 | Instrumentation and Measurement | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EL409 | Communication Systems - II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | EL4xx | Departmental Elective Course- 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EL402 | B.Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | EL4xx | Departmental Elective Course- 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 3. | EL4xx | Departmental Elective Course- 7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | EL4xx | Departmental Elective Course- 8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

## List of Departmental Elective Courses

| S. No. | Elective Code | Title of Elective | Elective no. |
|---|---|---|---|
| 1. | EL-305 | Signals and Systems | |
| 2. | EL-307 | Computer Architecture | |
| 3. | EL-309 | Special Electrical Machines | |
| 4. | EL-311 | Renewable Energy Systems | |
| 5. | EL-313 | IC Technology | |
| 6. | EL-315 | Digital Control & State Variable Analysis | DEC 1 and DEC 2 |
| 7. | EL-317 | Digital System Design | |
| 8. | EL-319 | Database Management Systems | |
| 9. | EL-321 | Algorithms Design and Analysis | |
| 10. | EL-323 | Soft Computing Techniques | |
| 11. | EL-308 | Power System Operation and Control | |
| 12. | EL-310 | Distributed Generation | |
| 13. | EL-312 | Electric Drives | |
| 14. | EL-314 | Power Electronic Applications to Power Systems | |
| 15. | EL-316 | Electrical Energy Storage Systems | DEC 3 and DEC 4 |
| 16. | EL-318 | Switched Mode Power Supplies | |
| 17. | EL-320 | Microwave Engineering | |
| 18. | EL-322 | VLSI Design | |
| 19. | EL-324 | Data Communication and Computer Networks | |
| 20. | EL-326 | CMOS Analog Integrated Circuits | |
| 21. | EL-411 | Design, Estimation & Costing of Industrial Electrical Systems | |
| 22. | EL-413 | Power System Modeling & Simulation | |
| 23. | EL-415 | Utilization of Electrical Energy & Traction | |
| 24. | EL-417 | Power System Reliability | |
| 25. | EL-419 | Active and Passive Network Synthesis | DEC-5 |
| 26. | EL-421 | Antenna and Wave Propagation | |
| 27. | EL-423 | HVDC Transmission | |
| 28. | EL-425 | Pulse Width Modulation for Power converters | |
| 29. | EL-427 | Advanced Analog Circuit Design | |
| 30. | EL-429 | Power Station Practices | |
| 31. | EL-404 | Power System Dynamics & Stability | |
| 32. | EL-406 | Distribution Systems Analysis & Control | |
| 33. | EL-408 | Restructured Power Systems | |
| 34. | EL-410 | Bio-medical Instrumentation | |
| 35. | EL-412 | Non-linear and Adaptive Control | |
| 36. | EL-414 | Operating System Design | |
| 37. | EL-416 | Grid Integration of Renewable Energy Sources | |
| 38. | EL-418 | Selected Topics in Power Electronics | |
| 39. | EL-420 | Power Quality | |
| 40. | EL-422 | Robotics and Machine Vision | |
| 41. | EL-426 | Flexible AC Transmission Systems | DEC 6, DEC 7 and DEC 8 |
| 42. | EL-428 | Smart Grid | |
| 43. | EL-430 | Digital Image Processing | |
| 44. | EL-432 | Process Instrumentation & Control | |
| 45. | EL-434 | Filter Design | |
| 46. | EL-436 | Switchgear and Protection | |
| 47. | EL-438 | Computer Control of Processes | |
| 48. | EL-440 | Microcontroller & Embedded Systems | |
| 49. | EL-442 | SCADA & Energy Management Systems | |
| 50. | EL-444 | DSP Applications to Electromechanical Systems | |
| 51. | EL-446 | AI and Expert Systems | |

# DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

# BACHELOR OF TECHNOLOGY

# (ELECTRONICS & COMMUNICATIONENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|--------|--------------|--------------|--------------|--------|---|---|---|--------|-----------|-----|-----|-----|-----|-----|
| | | | | | Teaching Scheme | | | Contact Hours/Week | | Exam Duration | | Relative Weights (%) | | |
| | | | | | | | | | | | | | | |

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|--------|--------------|--------------|--------------|--------|---|---|---|--------|-----------|-----|-----|-----|-----|-----|
| | | | | | | | | | | | | | | Group A |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 0 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |
| | | | | | | | | | | | | | | Group B |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EE251 | Electronic Instrumentation and Measurements | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EC 201 | Analog Electronics – I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EC203 | Digital Design – I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EC205 | Signals & Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 5. | EC207 | Engineering Analysis & Design (Network Analysis and Synthesis) | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EE262 | Electromagnetics | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EC 202 | Analog Electronics – II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EC204 | Digital Design – II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EC206 | Communication Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EC208 | Computer Architecture | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|----|------|------|------|-----|
| 1. | EC301 | Digital Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 2. | EC303 | Linear Integrated Circuits | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | ECxxx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | |
| 4. | ECxxx | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | - |
| 6. | HU301 | Professional Ethics & Human Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|----|------|------|------|-----|
| 1. | EC 302 | VLSI Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 2. | EC 304 | Digital Signal Processing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EC306 | Embedded Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | ECxxx | Departmental Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | |
| 5. | ECxxx | Departmental Elective Course- 4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | |
| 6. | HU302 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EC 401 | B. Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | EC403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | EC405 | Microwave Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EC407 | Optical Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EC 4xx | Departmental Elective Course- 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | |
| 6. | EC 4xx | Departmental Elective Course- 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EC402 | B. Tech Project-II (Contd. From VII Sem.) | DCC | 8 | | | | | | | | | | |
| 2. | EC 404 | Wireless Communication | DCC | 4 | 3 | 0 | 2 | 4 | - | 15 | 25 | 20 | 40 | - |
| 3. | EC 406 | Departmental Elective Course- 7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | - |
| 4. | EC 4xx | Departmental Elective Course- 8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 25/- | 20/25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.NO. | SUBJECT CODE | SUBJECTS | Elective No. |
|---|---|---|---|
| 1. | EC- 305 | Semiconductor Device Electronics | DEC -1,DEC-2 |
| 2. | EC – 307 | Antenna Design | |
| 3. | EC - 309 | Bio – Medical Electronics & Instrumentation | |
| 4. | EC - 311 | Algorithms Design And Analysis | |
| 5. | EC – 313 | Microprocessors And Interfacing | |
| 6. | EC – 315 | Computer Communication Networks | |
| 7. | EC - 317 | Operating Systems | |
| 8. | EC – 319 | CMOS Analog Integrated Circuits | |
| 9. | EC – 321 | IC Technology | |
| 10. | EC - 308 | Analog Filter Design | DEC-3,DEC-4 |
| 11. | EC – 310 | Testing And Diagnosis Of Digital System Design | |
| 12. | EC – 312 | Software Defined Radio And Cognitive Radio | |
| 13. | EC - 314 | RF Design | |
| 14. | EC – 316 | Wireless Sensor Networks | |
| 15. | EC – 318 | RF Circuits in CMOS Technology | |
| 16. | EC – 320 | Soft Computing | |
| 17. | EC – 322 | Green Sensors | |
| 18. | EC - 324 | Nano Electronics | |
| 19. | EC – 326 | Data Converters | |
| 20. | EC – 328 | Speech Recognition | |
| 21. | EC – 330 | Digital Image Processing | |
| 22. | EC - 409 | Computer Vision | DEC-5, DEC-6 |
| 23. | EC –411 | Bio – Medical Signal And Image Processing | |
| 24. | EC – 413 | Power Electronics | |
| 25. | EC – 415 | System On Chip Design | |
| 26. | EC – 417 | CAD For VLSI Design | |
| 27. | EC – 419 | Memory Design | |
| 28. | EC – 421 | Computer And Numerical Techniques In Electromagnetics | |
| 29. | EC – 423 | Internet Technologies | |
| 30. | EC – 425 | Mixed Signal Design | |
| 31. | EC – 408 | Low Power VLSI Design | DCE-7,DEC-8 |
| 32. | EC – 410 | Advanced Coding Theory | |
| 33. | EC- 412 | Machine Learning | |
| 34. | EC- 414 | EMC / EMI | |
| 35. | EC- 416 | Pattern Recognition | |
| 36. | EC- 418 | Estimation And Detection Theory | |
| 37. | EC – 420 | Cloud Computing | |
| 38. | EC – 422 | Robotics & Machine Vision | |
| 39. | EC – 424 | Fault Tolerant Computing | |
| 40. | EC – 426 | Distributed Computing | |
| 41. | EC – 428 | Neuroelectronics | |
| 42. | EC – 430 | Advanced Computer Architecture | |
| 43. | EC – 432 | Bio – Impedance Based Measurements | |
| 44. | EC – 434 | Fundamentals of MIMO | |
| 45. | EC – 436 | Advance Microwave & Antenna Design | |
| 46. | EC- 438 | Radar and Satellite Communication | |

# DEPARTMENT OF ENVIRONMENTAL ENGINEERING

# BACHELOR OF TECHNOLOGY

# (ENVIRONMENTAL ENGINEERING)

## I Year: Odd Semester

| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
| Group A | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |
| Group B | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Teaching Scheme | | | Contact Hours/Week | | Exam Duration | | Relative Weights (%) | | |
| Group A | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | ) |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |
| Group B | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | CE251 | Building Material & Construction | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EN 201 | Strength of Materials | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EN203 | Engineering & Environmental Surveying | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EN205 | Environmental Chemistry & Microbiology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 5. | EN207 | Engineering Analysis & Design | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | CE252 | Structural Analysis | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | EN 202 | Geotechnical Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EN204 | Water Engineering: Design & Application | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EN206 | Engineering Geology, GIS & Remote Sensing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EN208 | Fluid Mechanics & Hydraulic Mechines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EN301 | Environmental Hydraulics & Hydrology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 2. | EN303 | Instrumentation Methods & Analysis | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | ENxxx | Departmental Elective Course- 1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | ENxxx | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | - |
| 6. | HU301 | Professional Ethics & Human Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EN302 | Solid Waste Management | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | |
| 2. | EN304 | Air Pollution & Control | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | EN306 | Waste Water Engineering: Design and Application | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | ENxxx | Departmental Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | ENxxx | Departmental Elective Course- 4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | HU302 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 7. | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|----|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EN401 | B. Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | EN403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | EN405 | Project Management | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EN407 | Noise Pollution & Control | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | EN409 | Industrial Waste Management | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | EN4xx | Departmental Elective Course- 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|----|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EN402 | B. Tech Project -II | DCC | 8 | | | | | | | | | | |
| 2. | EN404 | Environmental Impact Assessment & Audit | DCC | 4 | 3 | 0 | 2 | 4 | - | 15 | 25 | 20 | 40 | - |
| 3. | EN4xx | Departmental Elective Course - 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | EN4xx | Departmental Elective Course- 7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.NO. | SUBJECT CODE | SUBJECTS | Elective No. |
|---|---|---|---|
| 1. | EN-305 | Soil Pollution & Remediation | DEC -1 ,2 |
| 2. | EN-307 | Environmental Toxicology & Risk Assessment | |
| 3. | EN-309 | Ecology and Bio-Monitoring Techniques | |
| 4. | EN-311 | Environmental System Modelling | |
| 5. | EN-313 | Advanced Mechanics of Fluids & Sediment Motion | |
| 6. | EN-315 | Climate Change & Global Warming | |
| 7. | EN-317 | Planning and Design of Environmental Engg. Works | |
| 8. | EN-319 | Water Resources System | |
| 9. | EN-321 | Ventilation and Air Conditioning | |
| 10. | EN–308 | Experimental Design & Data Analysis | DEC-3,4 |
| 11. | EN-310 | Green Technologies | |
| 12. | EN–312 | Fire Hazard & safety Control System | |
| 13. | EN–314 | Risk and Reliability Analysis of Environmental System | |
| 14. | EN–316 | Environmental Law and Policy | |
| 15. | EN–318 | Hazardous & Biomedical Waste Management | |
| 16. | EN–320 | Surface & Ground Water Pollution | |
| 17. | EN –322 | Disaster Management | |
| 18. | EN-411 | Occupational Health & Safety Management | DEC-5 |
| 19. | EN-413 | Structural Design of Storage Tank & Reservoirs | |
| 20. | EN–415 | Urban Air Emission & Modeling | |
| 21. | EN- 417 | Transportation Engineering and Planning | |
| 22. | EN-406 | Environment and Sustainable Development | DCE-6,7 |
| 23. | EN-408 | Advances in Water and Wastewater Treatment | |
| 24. | EN-410 | Sustainable Energy and Green Buildings | |
| 25. | EN-412 | Environmental Biotechnology | |
| 26. | EN-414 | Non-Conventional Energy Systems | |
| 27. | EN-416 | Sustainable Urban Transport | |
| 28. | EN-418 | Advanced Open Channel Hydraulics | |
| 29. | EN-420 | Water and Soil Conservation | |

# DEPARTMENT OF APPLIEDPHYSICS
# BACHELOR OF TECHNOLOGY
# (ENGINEERING PHYSICS)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| | | | | | | | | | | | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Teaching Scheme / Contact Hours/Week | | | | | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |

## II Year: Odd Semester)

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | ME251 | Engineering Mechanics | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 2. | EP201 | Introduction to Computing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | EP203 | Mathematical Physics | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4. | EP205 | Classical and Quantum Mechanics | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 5. | EP207 | Digital Electronics (Engineering Analysis and Design) | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | | Total | | | | | | | | | | | | |

## II Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EC262 | Communication System | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | EP202 | Condensed Matter Physics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | EP204 | Optics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | EP206 | Microprocessor and Interfacing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | EP208 | Computational Methods | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 6. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | | | 25 | 0 | 25 | 50 | - |
| 7. | | | | | | | | | | | | | | |

## III Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EP301 | Semiconductor Devices | DCC | 4 | 3 | 1 | - | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 2. | EP303 | Electromagnetic Theory, antennas and Propagation | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | EP3xx | Departmental Elective Course- 1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | EP3xx | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | - | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Technical Communication | HMC | 2 | 0 | 0 | - | 3 | 0 | 25 | - | 25 | 50 | |
| | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EP302 | Fiber Optics and Optical Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | EP304 | Fabrication and Characterization of Nanostructures | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 3. | EP306 | Microwave Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | EP3xx | Departmental Elective Course- 3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | EP3xx | Departmental Elective Course- 4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | HU302 | Profession Ethics & Human Values | HMC | 2 | 2 | 0 | - | 3 | 0 | 25 | - | 25 | 50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|-----|-----|-----|-----|-------|-------|--------|-------|-----|
| 1. | EP401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | EP403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | EP405 | VLSI and FPGA design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | EP407 | Mobile and Satellite communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | EP4xx | Departmental Elective Course -5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | EP4xx | Departmental Elective Course-6 (Minor) | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year:Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|---|---|-----|-----|-----|-----|-----|-----|-----|
| 1. | EP402 | B.Tech. Project-II | DCC | 8 | | | | | | | | | | |
| 2. | EP404 | Alternate Energy Storage and Conversion Devices | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | ·40 | - |
| 3. | EP4xx | Departmental Elective Course-7 (Minor) | DEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4. | EP4xx | Departmental Elective Course -8 | DEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | | | | 20 | | | | | | | | | | |

# List of Departmental Electives

| S.No. | Elective Code | Title of Elective | Elective no. |
|---|---|---|---|
| 1. | EP-305 | Atomic and Molecular Physics | DEC-1,2 |
| 2. | EP-307 | Biophysics | |
| 3. | EP-309 | Quantum Information and Computing | |
| 4. | EP-311 | Computer Networking | |
| 5. | EP-308 | Laser and Instrumentation | DEC-3,4 |
| 6. | EP-310 | Medical Physics and Physiological measurements | |
| 7. | EP-312 | Fourier optics and holography | |
| 8. | EP-314 | Instrumentation and Control | |
| 9. | EP-316 | Cosmology and Astrophysics | |
| 10. | EP-409 | Information theory and coding | DEC-5,6 |
| 11. | EP-411 | Advanced Simulation Techniques in Physics | |
| 12. | EP-413 | Continuum Mechanics | |
| 13. | EP-415 | Nano Science and Technology | |
| 14. | EP-417 | Photonics | |
| 15. | EP-419 | Introduction to Automation and Motion Control | |
| 16. | EP-421 | Principles of Nuclear Engineering | |
| 17. | EP-423 | Space and Atmospheric Science-I | |
| 18. | EP-425 | Plasma Science and Technology-I | |
| 19. | EP-406 | Introduction to Spintronics | DEC-7,8 |
| 20. | EP-408 | Integrated Optics | |
| 21. | EP-410 | Robotic Engineering | |
| 22. | EP-412 | Nuclear Materials for Engineering Applications | |
| 23. | EP-414 | Space and Atmospheric Science-II | |
| 24. | EP-416 | Plasma Science and Technology-II | |
| 25. | EP-418 | Digital Signal Processing | |
| 26. | EP-420 | Fuzzy Logic and Neural Networks | |
| 27. | EP-422 | Embedded Systems Design | |

# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## BACHELOR OF TECHNOLOGY

## (INFORMATION TECHNOLOGY)

### I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| Group A | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |
| Group B | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Teaching Scheme | | | Contact Hours/Week | Exam Duration | | Relative Weights (%) | | | |
| group | Group A | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |
| group | Group B | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |

## II Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|----|-----|-----|-----|-----|
| 1. | EC261 | Analog Electronics | AEC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 2. | IT201 | Data Structures | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 3. | IT203 | Object Oriented Programming | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 4. | IT205 | Discrete Structures | DCC | 4 | 3 | 1 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 5. | IT207 | Engineering Analysis and Design (Modeling & Simulation) | DCC | 4 | 3 | 1 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|----|-----|-----|-----|-----|
| 1. | EC252 | Digital Electronics | AEC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 2. | IT202 | Database Management Systems | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 3. | IT204 | Operating System Design | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 4. | IT206 | Computer Organization and Architecture | DCC | 4 | 3 | 1 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 5. | IT208 | Algorithm Design and Analysis | DCC | 4 | 3 | 1 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 6. | MG202 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|-----|-----|-----|-----|-------|------|--------|-------|-----|
| 1. | IT301 | Web Technology | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 2. | IT303 | Computer Networks | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 3. | IT3xx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | IT3xx | Departmental Elective Course -2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 6. | HU301 | Professional Ethics and Human values | HMC | 2 | 2 | 0 | 0 | 2 | - | 25 | - | 25 | 50 | - |
| 7. | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|-----|---|-----|-----|-----|-----|-------|------|--------|-------|-----|
| 1. | IT302 | Information Theory and coding | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 2. | IT304 | Software Engineering | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 3. | IT306 | Theory of Computation | DCC | 4 | 3 | 1 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 4. | IT3xx | Department Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | IT3xx | Department Elective Course -4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | HU302 | Technical Communications | HMC | 2 | 0 | 0 | 2 | 0 | - | 25 | - | 25 | 50 | - |
| 7. | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | IT401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | IT403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | IT405 | Compiler Design | DCC | 4 | 4 | 3 | 0 | 2 | 3 | 2 | 15 | 15 | 30 | 40 |
| 4. | IT407 | Telecommunication Engineering Fundamentals | DCC | 4 | 4 | 3 | 0 | 2 | 3 | 2 | 15 | 15 | 30 | 40 |
| 5. | IT4xx | Department Elective Course- 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | IT4xx | Department Elective Course- 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | IT402 | B.Tech. Project-II | DCC | 8 | | | | | | | | | | |
| 2. | IT404 | Wireless and Mobile Computing | DCC | 4 | 4 | 3 | 0 | 2 | 3 | 2 | 15 | 15 | 30 | 40 |
| 3. | IT4xx | Department Elective Course-7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | IT4xx | Department Elective Course-8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.No. | Subject Code | Subjects | Elective No. |
|---|---|---|---|
| 1. | IT-305 | Computer Graphics | DEC – 1, 2 |
| 2. | IT-307 | Communication Engineering | |
| 3. | IT-309 | Artificial Intelligence | |
| 4. | IT-311 | Advanced Data Structures | |
| 5. | IT-313 | Microprocessor & Interfacing | |
| 6. | IT-315 | Distributed Systems | |
| 7. | IT-317 | Soft Computing | |
| 8. | IT-319 | Software Architecture | |
| 9. | IT-321 | Embedded Systems | |
| 10. | IT-323 | Data Compression | |
| 11. | IT-308 | Optimization Techniques | DEC – 3, 4 |
| 12. | IT-310 | Parallel Algorithms | |
| 13. | IT-312 | Digital Signal Processing | |
| 14. | IT-314 | Optical Networks | |
| 15. | IT-316 | High Speed Networks | |
| 16. | IT-318 | Advanced Database Management Systems | |
| 17. | IT-320 | Multimedia System Design | |
| 18. | IT-322 | Real Time System | |
| 19. | IT-324 | Genetic Algorithms and Machine Learning | |
| 20. | IT-326 | Object Oriented Software Engineering | |
| 21. | IT-409 | Enterprise and Java Programming | DEC – 5, 6 |
| 22. | IT-411 | Digital Image Processing | |
| 23. | IT-413 | VLSI Design | |
| 24. | IT-415 | Software Project Management | |
| 25. | IT-417 | High Performance Computing | |
| 26. | IT-419 | Grid and Cluster Computing | |
| 27. | IT-421 | Swarm Optimization & Evolutionary Computing | |
| 28. | IT-423 | Data Mining and data Warehousing | |
| 29. | IT-425 | Natural Language Processing | |
| 30. | IT-427 | Information and Network Security | |
| 31. | IT-406 | Cyber Forensics | DEC – 7, 8 |
| 32. | IT-408 | Parallel Computer Architecture | |
| 33. | IT-410 | Intellectual Property Rights | |
| 34. | IT-412 | Bio Informatics | |
| 35. | IT-414 | Software Quality and Testing | |
| 36. | IT-416 | Big Data Analytics | |
| 37. | IT-418 | Cloud Computing | |
| 38. | IT-420 | Computer Vision | |
| 39. | IT-422 | Pattern Recognition | |
| 40. | IT-424 | Semantic Web and Web Mining | |

# DEPARTMENT OF APPLIED MATHEMATICS
# BACHELOR OF TECHNOLOGY
# (MATHEMATICS & COMPUTING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | | Contact Hours/Week | | Exam Duration (h) | | Relative Weights (%) | | | | |
| | | | | | | | | | | | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Contact Hours/Week** | | | **Exam Duration** | | **Relative Weights (%)** | | | | |
| | | | | Teaching Scheme | | | | | | | | | | |
| Group A | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | **21** | 15 | 1 | 9 | | | | | | | |
| Group B | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | CS251 | Data Structure | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | MC201 | Discrete Mathematics | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | MC203 | Mathematics-III | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | MC205 | Probability & Statistics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | MC207 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | CS262 | Algorithm Design & Analysis | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | MC202 | Real Analysis | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | MC204 | Scientific Computing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | MC206 | Computer Organization & Architecture | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | MC208 | Linear Algebra | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | MC301 | Operating System | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | MC303 | Stochastic Processes | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | MCxxx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | MCxxx- | Departmental Elective Course- 2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 2 | 0 | 25 | - | 25 | 50 | - |
| 7. | | | Total | 21 | | | | | | | | | | |

## III Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | MC302 | Data Base Management System | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | MC304 | Theory of Computation | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 3. | MC306 | Financial Engineering | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 4. | MCxxx | Departmental Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | MCxxx | Departmental Elective Course -4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 6. | HU302 | Human Ethical Value | HMC | 2 | 2 | 0 | 0 | 2 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: (Odd Semester)

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | MC401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | MC403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | MC405 | Graph Theory | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | MC407 | Cryptography & Network Security | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5. | MC409 | Mathematical Modeling & Simulation | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | MCxxx | Departmental Elective Course -5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | Total | Total | 22 | | | | | | | | | | |

## IV Year: (Even Semester)

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | MC402 | B.Tech. Project-II | DCC | 8 | | | | | | | | | | |
| 2. | MC4xx | Departmental Elective Course - 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 3. | MC4xx | Departmental Elective Course - 7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | MC4xx | Departmental Elective Course- 8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| | | Total | Total | 20 | | | | | | | | | | |

# List of Departmental Electives Courses

| S.No. | Subject Code | Subject | Elective No. |
|---|---|---|---|
| 1. | MC305 | Operations Research | DEC– 1 |
| 2. | MC307 | Fluid Dynamics | |
| 3. | MC309 | Number Theory | |
| 4. | MC315 | Modern Algebra | DEC– 2 |
| 5. | MC317 | Finite Element Method | |
| 6. | MC319 | Complex Analysis | |
| 7. | MC308 | Computer Network | DEC – 3 |
| 8. | MC310 | Software Engineering | |
| 9. | MC312 | Artificial Intelligence. | |
| 10. | MC318 | Computer Graphics | DEC– 4 |
| 11. | MC320 | Compiler Design | |
| 12. | MC322 | Cluster & Grid Computing | |
| 13. | MC324 | Big Data Analysis | |
| 14. | MC411 | Data Warehousing & Data Mining | DEC – 5 |
| 15. | MC413 | Web Technology | |
| 16. | MC415 | Wireless & Mobile Computing | |
| 17. | MC417 | Multimedia System Design | |
| 18. | MC404 | Matrix Computation | DEC– 6 |
| 19. | MC406 | Partial Differential Equations | |
| 20. | MC408 | Statistical Quality Control | |
| 21. | MC410 | Topology | |
| 22. | MC412 | Functional Analysis | |
| 23. | MC418 | Optimization Techniques. | DEC– 7 |
| 24. | MC420 | Information Theory & Coding | |
| 25. | MC422 | Numerical Methods for ODE | |
| 26. | MC424 | Game Theory | |
| 27. | MC426 | Differential Geometry | |
| 28. | MC432 | Fuzzy set & Fuzzy logic | DEC– 8 |
| 29. | MC434 | Numerical Methods for PDE | |
| 30. | MC436 | Petrinet Theory & Application | |
| 31. | MC438 | Tensor Calculus | |
| 32. | MC440 | Statistical Inference | |

# DEPARTMENT OF MECHANICAL ENGINEERING

# BACHELOR OF TECHNOLOGY

# (MECHANICAL ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| Group A | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| Group B | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | rRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| | | | | **Group A** | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 0 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | 21 | 15 | 1 | 9 | | | | | | | |
| | | | | **Group B** | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | PE251 | Engineering Materials & Metallurgy | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 2. | ME201 | Mechanics of Solids | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3. | ME203 | Thermal engineering-I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4. | ME205 | Machine Drawing and Solid Modelling | DCC | 4 | 0 | 0 | 6 | 3 | 0 | 0 | 50 | - | - | 50 |
| 5. | ME207 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| | PE252 | Manufacturing Machines | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 1. | ME 202 | Thermal Engineering-II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 2. | ME 204 | Fluid Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3. | ME 206 | Kinematics of Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4. | ME 208 | Manufacturing Technology-I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| 6. | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | ME301 | Fluid Systems | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 2. | ME303 | Dynamics of Machines | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 3. | ME305 | Design of Machine Elements | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 4. | ME307 | Manufacturing Technology-II | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | - |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| 6. | HU301 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | ME302 | Heat And Mass Transfer | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | |
| 2. | ME304 | Production and Operations Management | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30, | 40 | |
| 3. | MExxx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | - | 15/25 | 15/- | 30/25 | 40/50 | - |
| 4. | MExxx | Department Elective Course-2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | - | 15/25 | 15/- | 30/25 | 40/50 | |
| 5. | MExxx | Department Elective Course-3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | - | 15/25 | 15/- | 30/25 | 40/50 | |
| 6. | HU302 | Professional Ethics &Human Values | HMC | 2 | 2 | 0 | 0 | 3 | - | 25 | | 25 | 50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | ME401 | B. Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | ME 403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | ME 407 | Refrigeration & Air Conditioning | DCC | 4 | 3 | 0 | 2 | 3 | - | 15 | 15 | 30 | 40 | |
| 5. | ME4xx | Department Elective Course-4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | - | 15/25 | 15/- | 30/25 | 40/50 | |
| 6. | ME4xx | Departmental Elective Course -5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | - | 15/25 | 15/- | 30/25 | 40/50 | |
| 7. | ME4xx | Departmental Elective Course -6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | - | 15/25 | 15/- | 30/25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | ME 402 | B. Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | ME 404 | Industrial Engineering | DCC | 4 | 3 | 0 | 2 | 3 | | 15 | 15 | 30 | 40 | |
| 3. | ME 4xx | Departmental Elective Course -7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | |
| 4. | ME4xx | Departmental Elective Course -8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.No. | Subject Code | Subject | |
|-------|-------------|---------|---|
| 1. | ME -306 | Finite Element Method | DEC -1 |
| 2. | ME -308 | Gas Dynamics & Jet Propulsion | |
| 3. | ME -310 | Automation in Manufacturing | |
| 4. | ME -312 | Quality Management & Six Sigma Applications | |
| 5. | ME -314 | Mechanical Vibrations | DEC -2 |
| 6. | ME -316 | Power Plant Engineering | |
| 7. | ME -318 | Computer Aided Manufacturing | |
| 8. | ME -320 | Reliability & Maintenance Engineering | |
| 9. | ME -322 | Design of Mechanical Assemblies | DEC-3 |
| 10. | ME -324 | System modeling, simulation and analysis | |
| 11. | ME -326 | Pressure vessels and Piping Technology | |
| 12. | ME -328 | Composite Material Technology | |
| 13. | ME -409 | Mechatronics & Control | DEC -4 |
| 14. | ME -411 | I.C. Engines | |
| 15. | ME -413 | Metrology | |
| 16. | ME -415 | Project Management | |
| 17. | ME -419 | Robotics & Automation | DEC -5 |
| 18. | ME -421 | Computational Fluid Dynamics | |
| 19. | ME -423 | Advanced Manufacturing Processes | |
| 20. | ME -427 | Operations Research | |
| 21. | ME -429 | Industrial Tribology | DEC -6 |
| 22. | ME -431 | Non-conventional Energy Sources | |
| 23. | ME -433 | Computer Integrated Manufacturing  . | |
| 24. | ME -431 | Optimization techniques | |
| 25. | ME -406 | Elastic & Plastic Behaviour of Materials | DEC -7 |
| 26. | ME -408 | Combustion Generated Pollution | |
| 27. | ME -410 | Advances in Welding & Casting | |
| 28. | ME -412 | Operations and Manufacturing Strategy | |
| 29. | ME -414 | Fracture Mechanics | DEC-8 |
| 30. | ME -416 | Nuclear Energy | |
| 31. | ME -418 | Supply Chain Management | |
| 32. | ME -420 | Materials management | |

# DEPARTMENT OF MECHANICAL ENGINEERING

# BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING WITH SPECIALIZATION IN AUTOMOTIVE ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| Group A | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |
| Group B | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Contact Hours/Week** | | | **Exam Duration** | | **Relative Weights (%)** | | | | |
| | | | | **Teaching Scheme** | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PR |
| | | | | | | | **Group A** | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | 21 | 15 | 1 | 9 | | | | | | | |
| | | | | | | | **Group B** | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | PE261 | Quantitative Techniques | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | AE201 | Engineering Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | AE203 | Thermodynamics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | AE205 | Manufacturing Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | AE207 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | EE272 | Automotive Electrical and Electronics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | AE202 | Heat and Mass Transfer | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | AE204 | Theory of Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | AE206 | Mechanics of Solids | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | AE208 | Material Engineering & Metallurgy | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|------|------|------|------|------|
| 1. | AE301 | Manufacturing Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | AE303 | Fluid Mechanics And Hydraulic Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | AExxx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | AExxx | Departmental Elective Course -2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Technical Communication | HMC | 2 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR |
|-------|------|-------|------|----|----|----|----|----|----|------|------|------|------|------|
| 1. | AE302 | Design of Machine Elements | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2. | AE304 | Internal Combustion Engines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3. | AE306 | Design of Automobile Components | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | AExxx | Departmental Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | AExxx | Departmental Elective Course -4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 6. | HU302 | Professional Ethics and Human Values | HMC | 2 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 7. | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|----|----|----|----|----|------|------|------|------|------|
| 1. | AE401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | AE403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | AE405 | Alternative Fuels And Energy Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4. | AE407 | Production And Operations Management | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 5. | AE409 | Computer Aided Vehicle Design And Safety | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 6. | AE4xx | Departmental Elective Course -5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|----|----|----|----|----|------|------|------|------|------|
| 1. | AE402 | B.Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | AE4xx | Departmental Elective Course -6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 3. | AE4xx | Departmental Elective Course -7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | AE4xx | Departmental Elective Course -8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Elective Courses

| S.NO. | Elective Code | Title of Elective | Elective no. |
|---|---|---|---|
| 1 | AE-305 | Automotive Aerodynamics & CFD | DEC-1, 2 |
| 2 | AE-307 | Combustion Generated Pollution | |
| 3 | AE-309 | Operation Research | |
| 4 | AE-311 | Tyre Technology | |
| 5 | AE-313 | Thermal Engineering | |
| 6 | AE-315 | Turbo machinery and gas dynamics | |
| 7 | AE-317 | Power units and transmission | |
| 8 | AE-319 | Computer Simulation of I.C. Engine Process | |
| 9 | AE-321 | Advanced strength of material | |
| 10 | AE-323 | Finite Element Methods and Applications | |
| 11 | AE-308 | Measurement and Instrumentation | DEC-3,4 |
| 12 | AE-310 | Advanced Manufacturing Technology | |
| 13 | AE-312 | Quality Management & Six Sigma Applications | |
| 14 | AE-314 | Metrology | |
| 15 | AE-316 | Advances in Welding & Casting | |
| 16 | AE-318 | Materials for automobile components | |
| 17 | AE-320 | Tribology and lubrication | |
| 18 | AE-322 | Reliability & Maintenance Engineering | |
| 19 | AE-324 | Elastic & Plastic Behaviour of Materials | |
| 20 | AE-326 | Production Planning & Inventory Control | |
| 21 | AE-411 | Vehicle Maintenance & Tribology | DEC-5 |
| 22 | AE-413 | Vehicle Transport Management | |
| 23 | AE-415 | Power Plant Engineering | |
| 24 | AE-417 | Robotics & Automation | |
| 25 | AE-419 | Nuclear Energy | |
| 26 | AE-404 | Computer Integrated Manufacturing Systems | DEC-6 , DEC-7 and DEC-8 |
| 27 | AE-406 | Total Life Cycle Management | |
| 28 | AE-408 | Refrigeration & Automobile Air Conditioning | |
| 29 | AE-410 | Fuel Cells | |
| 30 | AE-412 | Modern Vehicle Technology | |
| 26 | AE-414 | Automobiles Vibration System Analysis | |
| 27 | AE-416 | Renewable Sources of Energy | |
| 28 | AE-418 | Supply Chain Management | |
| 29 | AE-420 | Vehicle Safety Engineering | |
| 30 | AE-422 | Packaging Technology | |
| 31 | AE-424 | Mechatronics | |
| 32 | AE-426 | Financial Management | |
| 33 | AE-428 | Fracture mechanics | |
| 34 | AE-430 | Product design and development | |
| 35 | AE-432 | Tractors and Farm Equipment and Off Road Vehicles | |
| 36 | AE-434 | Automobile process control | |

# DEPARTMENT OF PRODUCTION ENGINEERING

# BACHELOR OF TECHNOLOGY (PRODUCTION ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Teaching Scheme** | | | **Contact Hours/Week** | | | **Exam Duration (h)** | | **Relative Weights (%)** | | | | |
| | | | | | | | | | | | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

# I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Teaching Scheme / Contact Hours/Week | | Exam Duration | | Relative Weights (%) | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 . | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | :0 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - - | 25 | 50 | - |
| | | Total | | 21 | 15 | 1 | 9 | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|----|----|----|----|----|------|------|------|------|------|
| 1. | ME261 | Kinematic And Dynamic Of Machines | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 2. | PE201 | Engineering Materials & Metallurgy | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3. | PE203 | Thermal Engineering-I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4. | PE205 | Manufacturing Machines | DCC | 4 | 3 | 0 | 2 | 3 | 2 | 15 | 15 | 30 | 40 | |
| 5. | PE207 | Engineering Analysis And Design(Modeling And Simulation) | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S. No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|--------|------|-------|------|----|----|----|----|----|----|------|------|------|------|------|
| 1. | ME262 | Machine Design | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 2. | PE202 | Thermal Engineering-II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3. | PE204 | Industrial Engineering & Operation Research | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4. | PE206 | Fluid Mechanics & Machinery | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5. | PE208 | Metal Cutting &Tool Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 6. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|----|----|----|----|----|
| 1. | PE301 | Casting Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 2. | PE303 | Production Planning& Control | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3. | PE3xx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | PE3xx | Departmental Elective Course -2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | UExxx | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | | 25 | 50 | |
| 6. | HU301 | Technical Communication | HMC | 2 | 0 | 0 | 3 | 3 | 0 | 25 | | 25 | 50 | |
| | | | | 21 | | | | | 0 | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR |
|-------|------|-------|------|----|---|---|---|----|----|----|----|----|----|----|
| 1. | PE302 | Welding Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 2. | PE304 | Precision Manufacturing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3. | PE306 | Metrology & Quality Assurance | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4. | PE3xx | Departmental Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | PE3xx | Department Elective Course -4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | HU302 | Professional Ethics & Human | HMC | 2 | 2 | 0 | 0 | 3 | 0 | | | | | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: **Odd** Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | PE401 | B. Tech Project-I | DCC | 4 | | | | | | | | | | |
| 2. | PE403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | PE405 | Metal Forming & Press Working | DCC | 4 | 3 | 0 | 2 | 3 | | 15 | 15 | 30 | 40 | |
| 4. | PE407 | Quantitative Techniques | DCC | 4 | 3 | 0 | 2 | 3 | | 15 | 15 | 30 | 40 | |
| 5. | PE4xx | Department Elective Course-5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | PE4xx | Department Elective Course-6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | PE402 | B. Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | PE404 | Total Quality Management | DCC | 4 | 3 | 0 | 2 | 3 | | 15 | 15 | 30 | 40 | |
| 3. | PE4xx | Departmental Elective Course -7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | PE4xx | Departmental Elective Course -8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

## List of Departmental Electives Courses

| S.No. | Subject Code | Subject | Elective No. |
|---|---|---|---|
| 1. | PE-305 | Advance Machine Design | DEC-1 and DEC-2 |
| 2. | PE-307 | Finite Element Method | |
| 3. | PE-309 | Rapid Prototyping Tooling & Manufacturing | |
| 4. | PE-311 | Sustainable Manufacturing | |
| 5. | PE-313 | Design Innovation & Manufacturing | |
| 6. | PE-315 | Mechatronics | |
| 7. | PE-308 | Green Energy Technology | DEC-3 and DEC-4 |
| 8. | PE-310 | Industrial Automation | |
| 9. | PE-312 | Automobile Engg | |
| 10. | PE-314 | Manufacturing of Composite Materials | |
| 11. | PE-316 | Advances in Welding | |
| 12. | PE-318 | Advances in Casting | |
| 13. | PE-409 | CNC Machine & Programming | DEC-5 and DEC-6 |
| 14. | PE-411 | Computer Integrated Design and Manufacturing | |
| 15. | PE-413 | Robotics and Automation | |
| 16. | PE-415 | Financial Management | |
| 17. | PE-417 | Materials Management | |
| 18. | PE-419 | Project Management | |
| 19. | PE-421 | Reliability, Maintenance & Safety Engineering | |
| 20. | PE-423 | Thermal Spray Technology | |
| 21. | PE-406 | Manufacturing & Applications of Polymer Composites | DEC-7 and DEC-8 |
| 22. | PE-408 | Industrial Tribology | |
| 23. | PE-410 | Packaging Technology | |
| 24. | PE-412 | Supply Chain Management & Value Engineering | |
| 25. | PE-414 | Flexible Manufacturing System | |
| 26. | PE-416 | Work Study & Ergonomic | |
| 27. | PE-418 | Advance Manufacturing Processes | |

# DEPARTMENT OF APPLIED CHEMISTRY & POLYMER TECHNOLOGY
# BACHELOR OF TECHNOLOGY
# (POLYMER SCIENCE & CHEMICAL TECHNOLOGY)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | | | | Contact Hours/Week | Exam Duration (h) | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics -- I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|--------|-------------|--------------|--------------|--------|---|---|---|--------|-----------|-----|-----|-----|-----|-----|
| | | | | | | | | | | | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | 15 | 1 | 9 | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EC271 | Basic Electronics Engg. | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | PT201 | Principles of Polymerization | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | PT203 | Elements of Chemical Engg. | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | PT205 | Chemical Engineering Thermodynamics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | PT207 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | MG201 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## II Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | EE272 | Instrumentation and Control | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | PT202 | Fluid Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | PT204 | Polymer Processing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | PT206 | Polymer Structure and Properties | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | PT208 | Chemical Reaction Engg. | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 6. | HU202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | PT301 | Heat Transfer | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | PT303 | Advance Polymer Processing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | PT3xx | Departmental. Elective Course-1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 4 | PT3xx | Departmental. Elective Course-2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 5. | UE | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | PT302 | Rubber Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | PT304 | Mass Transfer | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | PT306 | Plastic Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | PT3xx | Departmental. Elective Course-3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | - |
| 5. | PT3xx | Departmental. Elective Course-4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30/25 | 40/50 | |
| 6. | HU302 | Professional Ethics and Human values | HMC | 2 | 2 | 0 | 0 | 3 | - | 25 | - | 25 | 50 | - |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | PT401 | B. Tech Project-I | DCC | 4 | 0 | 0 | 4 | | | | | | | |
| 2. | PT403 | Training Seminar | DCC | 2 | 0 | 2 | 0 | | | | | | | |
| 3. | PT405 | Fibre Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | PT407 | Chemical Process Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | PT4xx | Departmental. Elective Course - 5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | PT4xx | Departmental. Elective Course - 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | PT402 | B. Tech Project-II | DCC | 8 | | | | | | | | | | |
| 2. | PT404 | Polymer Product and Die Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | PT4xx | Departmental. Elective Course-7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | PT4xx | Departmental Elective Course-8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | Total | | 20 | | | | | | | | | | |

# List of Departmental Electives Courses

| S. No. | Sub. Code | Course Title | DEC detail |
|---|---|---|---|
| 1. | PT-305 | Process Equipment Design | DEC – 1 & 2 |
| 2. | PT-307 | Optimization Techniques | |
| 3. | PT-309 | Petroleum Refining Engineering | |
| 4. | PT-311 | Renewable & Non-renewable energy | |
| 5. | PT-313 | Combustion Engineering | |
| 6 | PT-315 | Packaging Technology | |
| 7 | PT-317 | Polymer Coatings & Adhesives | |
| 8 | PT-319 | Biomaterials | |
| 9 | PT-321 | Biosensor Technology | |
| 10 | PT-323 | Biochemical Engineering | |
| 11 | PT-308 | Advanced Chemical Reaction Engineering | DEC – 3 & 4 |
| 12 | PT-310 | Chemical Process Simulation | |
| 13 | PT-312 | Numerical Methods in Chemical Engineering | |
| 14 | PT-314 | CAD in Chemical Engineering | |
| 15 | PT-316 | Corrosion Engineering | |
| 16 | PT-318 | Polymer Blends and Composite | |
| 17 | PT-320 | Polymer Rheology | |
| 18 | PT-322 | Non-Woven Technology | |
| 19 | PT-324 | Application of Nanotechnology in Polymer | |
| 20 | PT-326 | Polymer Reaction Engineering | |
| 21 | PT-409 | Tyre Technology | DEC – 5 & 6 |
| 22 | PT-411 | Thermoplastic Elastomers | |
| 23 | PT-413 | Resins Technology | |
| 24 | PT-415 | Paint Technology | |
| 25 | PT-417 | Footwear Technology | |
| 26 | PT-419 | Plastic and Environment | |
| 27 | PT-421 | Industrial Waste Management | |
| 28 | PT-423 | Polymer Degradation | |
| 29 | PT-425 | Energy Conservation & Recycling | |
| 30 | PT-427 | Safety & Hazards in Chemical Industry | |
| 31 | PT-406 | Speciality Polymers | DEC – 7 & 8 |
| 32 | PT-408 | Colouration Technology | |
| 33 | PT-410 | Membrane Technology | |
| 34 | PT-412 | Inorganic Polymer | |
| 35 | PT-414 | Food Technology | |
| 36 | PT-416 | Process Design and Engineering Economics | |
| 37 | PT-418 | Fertilizer Technology | |
| 38 | PT-420 | Fuel Cell Technology | |
| 39 | PT-422 | Pharmaceutical Technology | |
| 40 | PT-424 | Rocket Propulsion and Explosives | |

# DEPARTMENT OF COMPUTER ENGINEERING

# BACHELOR OF TECHNOLOGY (SOFTWARE ENGINEERING)

## I Year: Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | | | | Contact Hours/Week | Exam Duration (h) | Relative Weights (%) | | | | |
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | AC101 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | ME101 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 5 | ME103 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | HU101 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **16** | **1** | **7** | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA101 | Mathematics - I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2 | AP101 | Physics – I | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3 | EE101 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4 | CO101 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5 | ME105 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | 50 |
| 6 | EN101 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | **Total** | | **21** | **15** | **1** | **9** | | | | | | | |

## I Year: Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | P. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Teaching Scheme | | | Contact Hours/Week | Exam Duration | | Relative Weights (%) | | | |
| | | | | | | | | | | | | | | |

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | P. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Group A** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | EE102 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | CO102 | Programming Fundamentals | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 5 | ME102 | Engineering Graphics | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | |
| 6 | EN102 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | 21 | 15 | 1 | 9 | | | | | | | |
| **Group B** | | | | | | | | | | | | | | |
| 1 | MA102 | Mathematics – II | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 2 | AP102 | Physics – II | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 3 | AC102 | Chemistry | ASC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | |
| 4 | ME104 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| 5 | ME106 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 0 | 3 | - | 50 | - | - | |
| 6 | HU102 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | |
| | | **Total** | | 21 | 16 | 1 | 7 | | | | | | | |

## II Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | EC261 | Analog Electronics | AEC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 2. | SE201 | Data Structures | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | SE203 | Object Oriented Programming | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | SE205 | Web Technology | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | SE207 | Engineering Analysis and Design (Modelling and Simulation) | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU201 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## Second Year (Even Semester)

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 1. | EC-252 | Digital Electronics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | SE202 | Software Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | SE204 | Computer Organization & Architecture | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 4. | SE206 | Database Management Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | SE208 | Discrete Structures | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | MG202 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 23 | | | | | | | | | | |

## III Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | SE301 | Object Oriented Software Engineering | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | SE303 | Algorithm Design & Analysis | DCC | 4 | 3 | 0 | | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | SE3xx | Departmental Elective Course -1 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 4. | SE3xx | Departmental Elective Course -2 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 5. | | University Elective Course | UEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 6. | HU301 | Professional Ethics & Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| | | Total | | 21 | | | | | | | | | | |

## III Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PR |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | SE302 | Software Validation, Verification & Testing | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 2. | SE304 | Operating System | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | SE306 | Theory of Computation | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | - | 25 | 50 | - |
| 4. | SE3xx | Departmental Elective Course -3 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 5. | SE3xx | Departmental Elective Course -4 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | - |
| 6. | HU302 | Technical Communication | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | - | 25 | 50 | -- |
| | | Total | | 22 | | | | | | | | | | |

## IV Year: Odd Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | SE401 | B.Tech. Project-I | DCC | 4 | | | | | | | | | | |
| 2. | SE403 | Training Seminar | DCC | 2 | | | | | | | | | | |
| 3. | SE405 | Software Project Management | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 4. | SE407 | Computer Networks | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 5. | SE4xx | Departmental Elective Course -5 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 6. | SE4xx | Departmental Elective Course- 6 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | | 22 | | | | | | | | | | | |

## IV Year: Even Semester

| S.No. | Code | Title | Area | Cr | L | T | P | TH | PH | CWS | PRS | MTE | ETE | PRE |
|-------|------|-------|------|----|---|---|---|----|----|-----|-----|-----|-----|-----|
| 1. | SE402 | B.Tech. Project-II | DCC | 8 | | | | | | | | | | |
| 2. | SE404 | Software Design Pattern | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 15 | 30 | 40 | - |
| 3. | SE4xx | Departmental Elective Course-7 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| 4. | SE4xx | Departmental Elective Course- 8 | DEC | 4 | 3 | 0/1 | 2/0 | 3 | 0 | 15/25 | 15/- | 30 /25 | 40/50 | |
| | | | 20 | | | | | | | | | | | |

# List of Departmental Elective Courses

|  | Subject Code | Subject |  |
|---|---|---|---|
| 1. | SE-305 | Computer Graphics | DEC-1, 2 |
| 2. | SE-307 | Information Theory and coding |  |
| 3 | SE-309 | Digital Signal Processing |  |
| 4. | SE-311 | Advanced Data Structures |  |
| 5. | SE-313 | Microprocessor & Interfacing |  |
| 6. | SE- 308 | Distributed Systems |  |
| 7. | SE-310 | Soft Computing |  |
| 8. | SE-312 | Artificial Intelligence |  |
| 9. | SE-314 | Agile Software Process |  |
| 10. | SE-316 | Data Compression |  |
| 11. | SE-318 | Digital Image Processing | DEC-3, 4 |
| 12. | SE-320 | Multimedia Systems |  |
| 13. | SE-322 | Parallel Computer Architecture |  |
| 14. | SE-324 | Bio-Informatics |  |
| 15. | SE-326 | Natural Language Processing |  |
| 16 | SE-409 | Advanced Database Management Systems |  |
| 17. | SE-411 | Compiler Design |  |
| 18. | SE-413 | Real Time Systems |  |
| 19. | SE-415 | Parallel Algorithms |  |
| 20. | SE-417 | Software Architecture |  |
| 21. | SE-419 | Pattern Recognition | DEC-5, 6 |
| 22. | SE-421 | Data Mining & Warehousing |  |
| 23. | SE-423 | Human Computer Interaction |  |
| 24. | SE-425 | Cyber-Forensics |  |
| 25. | SE-427 | Software Quality & Metrics |  |
| 26. | SE-429 | Robotics |  |
| 27. | SE-431 | Machine Learning |  |
| 28. | SE-433 | Distributed Databases |  |
| 29. | SE-435 | Software Reuse |  |
| 30. | SE-437 | Intellectual Property Rights & Cyber Laws |  |
| 31. | SE-406 | Information & Network Security | DEC-7,8 |
| 32. | SE-408 | Wireless Sensor Networks |  |
| 33. | SE-410 | Empirical Software Engineering |  |
| 34. | SE-412 | Semantic Web and Web Mining |  |
| 35. | SE-414 | Decision Support Systems |  |
| 36. | SE-416 | Cloud Computing |  |
| 37. | SE-418 | Enterprise Resource Planning (ERP) |  |
| 38. | SE-420 | Big Data Analytics |  |
| 39. | SE-422 | Wireless and Mobile Computing |  |
| 40. | SE-424 | Requirement Engineering |  |

# List of University Elective Course Courses

| S.No. | SUBJECT CODE | SUBJECTS |
|---|---|---|
| | MC | History Culture & Excitement of Mathematics |
| | EC - | Mechatronics |
| | EC – | Computer Vision |
| | EC – | Embedded System |
| | EC – | Digital Image Processing |
| | EC – | Vlsi Design |
| | ME- | Power Plant Engineering |
| | ME- | Renewable Sources of Energy |
| | ME- | Combustion Generated Pollution |
| | ME- | Thermal System |
| | ME- | Refrigeration & Air Conditioning |
| | ME- | Industrial Engineering |
| | ME- | Product Design & Simulation |
| | ME- | Computational fluid dynamics |
| | ME- | Finite Element Methods |
| | ME- | Total Life Cycle Management |
| | ME- | Value Engineering |
| | RE | Advance Machining Process |
| | PE- | Supply Chain Management |
| | PE – | Work Study Design |
| | PE – | Product Design & Simulation |
| | PE- | Total Life Cycle Management |
| | PE- | Total Quality Management |
| | CO-315 | Enterprise & Java Programming |
| | CO-317 | E-commerce & ERP |
| | CO-319 | Cryptography & Information Security |
| | CO-321 | Operating System |
| | CO-323 | Intellectual Property Rights & Cyber Laws |
| | PT-326 | High Performance Polymers |
| | PT-328 | Separation Technology |
| | RT-330 | Non-Conventional Energy |
| | PT-332 | Polymer Waste Management |
| | PT-334 | Nanotechnology in Polymers |
| | PT-336 | Applications of Polymer Blends and Composite |
| | EE- | Power Electronics Systems |
| | EE- | Electrical Machines and Power Systems |
| | EE- | Instrumentation Systems |
| | EE- | Utilisation of Electrical Energy |
| | EE- | Non-conventional Energy Systems |
| | EE- | Embedded Systems |
| | MG : | Fundamentals of Financial Accounting and Analysis |
| | MG : | Fundamentals of Marketing |
| | MG : | Human Resource Management |
| | MG : | Knowledge and Technology Management |

# DEPARTMENT OF CIVIL ENGINEERING

## BACHELOR OF TECHNOLOGY EVENING (CIVIL ENGINEERING)

### I Year

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **Odd Semester** | | | | | | |
| | **Teaching Scheme** | | | | | | | **Contact Hours/Week** | | **Exam Duration (h)** | | **Relative Weights (%)** | | |
| 1 | CEC-105 | Basic Electronics & Instrumentation | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CCE-101 | Civil Engineering Basics & Applications | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 3 | CCE-103 | Engineering Analysis & Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-101 | Communication Skills | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **14** | **11** | **1** | **4** | | | | | | | |
| | | | | | | | | **Even Semester** | | | | | | |
| 1 | CEN-102 | Environmental Engineering | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CCE-102 | Engineering Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CCE-104 | Fluid Mechanics | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4 | CHU-102 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **15** | **12** | **1** | **4** | | | | | | | |

## II Year

<table>
<tr><th colspan="18">Odd Semester</th></tr>
<tr><th colspan="6">Teaching Scheme</th><th colspan="2">Contact Hours/Week</th><th colspan="2">Exam Duration (h)</th><th colspan="5">Relative Weights (%)</th></tr>
<tr><th>S. No.</th><th>Subject Code</th><th>Course Title</th><th>Subject Area</th><th>Credit</th><th>L</th><th>T</th><th>P</th><th>Theory</th><th>Practical</th><th>CWS</th><th>PRS</th><th>MTE</th><th>ETE</th><th>PRE</th></tr>
<tr><td>1</td><td>CCE-201</td><td>Mechanics of Solids</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CCE-203</td><td>Engineering Survey</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CCE-205</td><td>Soil Mechanics</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>4</td><td>CHU-201</td><td>Professional Ethics and Human Values</td><td>HMC</td><td>2</td><td>2</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td></td><td>Total</td><td></td><td></td><td>14</td><td>11</td><td>0</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><th colspan="18">Even Semester</th></tr>
<tr><td>1</td><td>CCE-202</td><td>Hydraulics & Hydraulic Machines</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CCE-204</td><td>Analysis of Determinate Structures</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CCE-206</td><td>Design of RCC Structures</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>4</td><td>CHU-202</td><td>Engineering Economics</td><td>HMC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td></td><td>Total</td><td></td><td></td><td>15</td><td>12</td><td>0</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

-95-

## III Year

<table>
<tr><th colspan="17">Odd Semester</th></tr>
<tr><th colspan="6">Teaching Scheme</th><th colspan="2">Contact Hours/Week</th><th colspan="2">Exam Duration (h)</th><th colspan="5">Relative Weights (%)</th></tr>
<tr><th>S. No.</th><th>Subject Code</th><th>Course Title</th><th>Subject Area</th><th>Credit</th><th>L</th><th>T</th><th>P</th><th>Theory</th><th>Practical</th><th>CWS</th><th>PRS</th><th>MTE</th><th>ETE</th><th>PRE</th></tr>
<tr><td>1</td><td>CCE-301</td><td>Analysis of Indeterminate Structures</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CCE-303</td><td>Geotechnical Engineering</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CCE-3xx</td><td>Departmental Elective-1</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>4</td><td>----</td><td>University Elective</td><td>UEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td colspan="4">Total</td><td>15</td><td>12</td><td>1/0</td><td>4/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><th colspan="17">Even Semester</th></tr>
<tr><td>1</td><td>CCE-302</td><td>Transportation Engineering</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CCE-3xx</td><td>Department Elective -2</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>3</td><td>CCE-3xx</td><td>Department Elective -3</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>4</td><td>CCE-3xx</td><td>Department Elective -4</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td colspan="4">Total</td><td>15</td><td>12</td><td>2/0</td><td>2/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

## IV Year

| | | | | | Odd Semester | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Teaching Scheme | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
| 1 | CCE-401 | Design of Steel Structures | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CCE-403 | Water Resources Engineering+ | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CCE-4xx | Department Elective -5 | DEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4 | CCE-4xx | Department Elective -6 | DEC | 4 | 3 | 1/0 | 0/2 | 3 | 0 | 15/25 | 25/0 | 20/25 | 40/50 | - |
| 5 | CCE-405 | *B. Tech. Project | | 4 | - | - | - | | | | | 40 | 60 | |
| | | Total | | 19 | 12 | 1/0 | 4/6 | | | | | | | |

*To be done at their place of work

| | | | | | Even Semester | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CCE-402 | Construction Technology & Management | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CCE-4xx | Department Elective -7 | DEC | 4 | 3 | 1/0 | 0/2 | 3 | 0 | 15/25 | 25/0 | 20/25 | 40/50 | - |
| 4 | CCE-4xx | Department Elective -8 | DEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 5 | CCE-406 | *B. Tech. Project (Continued from 7th Sem) | | 8 | - | - | - | | | | | 40 | 60 | |
| | | Total | | 19 | 9 | 1/0 | 2/4 | | | | | | | |

*To be done at their place of work

## List of Departmental Elective Courses

| SN | Subject Code | Subject | Elective NO. |
|----|--------------|---------|--------------|
| 1 | CCE305 | Mechanics of Materials | DEC-1 |
| 2 | CCE307 | Advanced geo-technical engineering | |
| 3 | CCE309 | Environmental Engineering Design | |
| 4 | CCE311 | Photogrammetry and astronomy | |
| 5 | CCE304 | Earthquake Technology | DEC-2 |
| 6 | CCE306 | Rock engineering | |
| 7 | CCE308 | Solid Waste Management & Air Pollution Control | |
| 8 | CCE310 | Application of geo-informatics remote sensing and GIS in engineering | |
| 9 | CCE312 | Disaster Management | DEC-3 |
| 10 | CCE314 | Geo-technical processes | |
| 11 | CCE316 | Water Power Systems & Design | |
| 12 | CCE318 | Tunnel, ports and harbor engineering | |
| 13 | CCE320 | Matrix methods of structural analysis | DEC-4 |
| 14 | CCE322 | Analysis & Design of Underground Structures | |
| 15 | CCE324 | Computational Hydraulics | |
| 16 | CCE326 | Traffic and transportation planning | |
| 17 | CCE405 | Advanced design of concrete structures | DEC-5 |
| 18 | CCE407 | Interaction behavior of soil structure | |
| 19 | CCE409 | Water Resources Management | |
| 20 | CCE411 | Transportation safety and environment | |
| 21 | CCE413 | Finite element method for 2-D structures | DEC-6 |
| 22 | CCE415 | Soil Dynamics | |
| 23 | CCE417 | Hydraulic structures and flood control works | |
| 24 | CCE419 | Advanced transportation engineering | |
| 25 | CCE404 | Advanced design of steel structures | DEC-7 |
| 26 | CCE406 | Computational Geo-mechanics | |
| 27 | CCE408 | Advanced Fluid Mechanics | |
| 28 | CCE410 | Construction and design aspects in transportation engineering | |
| 29 | CCE412 | Design of bridges | DEC-8 |
| 30 | CCE414 | Geo-environmental and geo-hazard engineering | |
| 31 | CCE416 | Ground water and seepage | |
| 32 | CCE418 | Traffic Engineering | |

# DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

## BACHELOR OF TECHNOLOGY EVENING (ELECTRONICS & COMMUNICATION ENGINEERING)

### I Year

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| | | | | | | | | | **Odd Semester** | | | | | |
| | | | | | | | | | | | | | | |
| | *Teaching Scheme* | | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| 1 | CEE-107 | Electronic Instrumentation and Measurements | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEC-101 | Analog Electronics – I | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 3 | CEC-103 | Engineering Analysis & Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-101 | Communication Skills | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **14** | **11** | **1** | **4** | | | | | | | |
| | | | | | | | | | **Even Semester** | | | | | |
| 1 | CEE-106 | Electro-Magnetics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEC-102 | Digital Design – I | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEC-104 | Signals & Systems | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4 | CHU-102 | Principles of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **15** | **12** | **1** | **4** | | | | | | | |

## II Year

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **Odd Semester** | | | | | | |
| | Teaching Scheme | | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| 1 | CEC-201 | Analog Electronics – II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEC-203 | Digital Design – II | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEC-205 | Communication Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-201 | Professional Ethics and Human Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **14** | 11 | 0 | 6 | | | | | | | |
| | | | | | | | | **Even Semester** | | | | | | |
| 1 | CEC-202 | Digital Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEC-204 | Linear Integrated Circuits | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEC-206 | VLSI Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **15** | 12 | 0 | 6 | | | | | | | |

## III Year

<table>
<tr><td colspan="18" align="center"><b>Odd Semester</b></td></tr>
<tr><td colspan="6" align="center">Teaching Scheme</td><td colspan="3" align="center">Contact Hours/Week</td><td colspan="2" align="center">Exam Duration (h)</td><td colspan="5" align="center">Relative Weights (%)</td></tr>
<tr><td>S. No.</td><td>Subject Code</td><td>Course Title</td><td>Subject Area</td><td>Credit</td><td>L</td><td>T</td><td>P</td><td>Theory</td><td>Practical</td><td>CWS</td><td>PRS</td><td>MTE</td><td>ETE</td><td>PRE</td></tr>
<tr><td>1</td><td>CEC-301</td><td>Digital Signal Processing</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CEC-303</td><td>Embedded Systems</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CEC-3xx</td><td>Departmental Elective-1</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>4</td><td>----</td><td>University Elective</td><td>UEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td colspan="4" align="center">Total</td><td>15</td><td>12</td><td>1/0</td><td>4/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="15" align="center"><b>Even Semester</b></td></tr>
<tr><td>1</td><td>CEC-302</td><td>Microwave Engineering</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CEC-3xx</td><td>Department Elective -2</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>3</td><td>CEC-3xx</td><td>Department Elective -3</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>4</td><td>CEC-3xx</td><td>Department Elective -4</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td colspan="4" align="center">Total</td><td>16</td><td>12</td><td>2/0</td><td>2/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

## IV Year

### Odd Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| 1 | CEC-401 | Optical Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEC-403 | Wireless Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEC-4xx | Department Elective -5 | DEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4 | CEC-4xx | Department Elective -6 | DEC | 4 | 3 | 1/0 | 0/2 | 3 | 0 | 15/25 | 25/0 | 20/25 | 40/50 | - |
| 5 | CEC-405 | *B. Tech. Project | | 4 | - | - | - | | | | | 40 | 60 | |
| | | **Total** | | **19** | 12 | 1/0 | 4/6 | | | | | | | |

*To be done at their place of work

### Even Semester

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CEC-402 | Radar & Satellite Communication | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEC-4xx | Department Elective -7 | DEC | 4 | 3 | 1/0 | 0/2 | 3 | 0 | 15/25 | 25/0 | 20/25 | 40/50 | - |
| 4 | CEC-4xx | Department Elective -8 | DEC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 5 | CEC-406 | *B. Tech. Project (Continued from 7th Sem) | | 8 | - | - | - | | | | | 40 | 60 | |
| | | **Total** | | **19** | 9 | 1/0 | 2/4 | | | | | | | |

*To be done at their place of work

# List of Departmental Elective Courses

| S.NO. | SUBJECT CODE | SUBJECTS | Elective No. |
|---|---|---|---|
| 1. | CEC- 305 | Semiconductor   Device Electronics | DEC -1, DEC-2 |
| 2. | CEC - 307 | Antenna Design | |
| 3. | CEC - 309 | Bio – Medical Electronics &   Instrumentation | |
| 4. | CEC - 311 | Algorithms Design   And Analysis | |
| 5. | CEC – 313 | Microprocessors And Interfacing | |
| 6. | CEC – 315 | Computer  Communication Networks | |
| 7. | CEC - 317 | Operating  Systems | |
| 8. | CEC – 319 | CMOS  Analog Integrated Circuits | |
| 9. | CEC – 321 | IC  Technology | |
| 10. | CEC - 308 | Analog Filter  Design | DEC-3, DEC-4 |
| 11. | CEC – 310 | Testing And Diagnosis Of Digital System Design | |
| 12. | CEC – 312 | Software  Defined  Radio  And  Cognitive   Radio | |
| 13. | CEC -  314 | RF Design | |
| 14. | CEC – 316 | Wireless  Sensor  Networks | |
| 15. | CEC – 318 | RF  Circuits in CMOS  Technology | |
| 16. | CEC – 320 | Soft Computing | |
| 17. | CEC – 322 | Green Sensors | |
| 18. | CEC - 324 | Nano Electronics | |
| 19. | CEC – 326 | Data   Converters | |
| 20. | CEC – 328 | Speech  Recognition | |
| 21. | CEC – 330 | Digital Image Processing | |
| 22. | CEC - 409 | Computer  Vision | DEC-5, DEC-6 |
| 23. | CEC –411 | Bio – Medical   Signal And Image Processing | |
| 24. | CEC – 413 | Power   Electronics | |
| 25. | CEC – 415 | System   On Chip Design | |
| 26. | CEC – 417 | CAD  For VLSI Design | |
| 27. | CEC – 419 | Memory   Design | |
| 28. | CEC – 421 | Computer And Numerical Techniques In Electromagnetics | |
| 29. | CEC – 423 | Internet   Technologies | |
| 30. | CEC – 425 | Mixed Signal   Design | |
| 31. | CEC – 408 | Low Power   VLSI  Design | DEC-7, DEC-8 |
| 32. | CEC – 410 | Advanced   Coding  Theory | |
| 33. | CEC- 412 | Machine  Learning | |
| 34. | CEC- 414 | EMC / EMI | |
| 35. | CEC- 416 | Pattern  Recognition | |
| 36. | CEC- 418 | Estimation And Detection Theory | |
| 37. | CEC – 420 | Cloud Computing | |
| 38. | CEC – 422 | Robotics & Machine   Vision | |
| 39. | CEC – 424 | Fault   Tolerant  Computing | |
| 40. | CEC – 426 | Distributed   Computing | |
| 41. | CEC – 428 | Neuro-electronics | |
| 42. | CEC – 430 | Advanced Computer  Architecture | |
| 43. | CEC – 432 | Bio – Impedance   Based Measurements | |
| 44. | CEC – 434 | Fundamentals of MIMO | |
| 45. | CEC – 436 | Advance Microwave & Antenna   Design | |

# DEPARTMENT OF ELECTRICAL ENGINEERING

## BACHELOR OF TECHNOLOGY EVENING (ELECTRICAL ENGINEERING)

### I Year

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Contact Hours/Week** | | | **Exam Duration (h)** | | **Relative Weights (%)** | | | | |
| Odd Semester | | | | | | | | | | | | | | |
| 1 | CMA-101 | Engineering Mathematics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEE-101 | Network Analysis & Synthesis | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 3 | CEE-103 | Engineering Analysis & Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-101 | Communication Skills | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **14** | **11** | **1** | **4** | | | | | | | |
| Even Semester | | | | | | | | | | | | | | |
| 1 | CEC-102 | Electronic Devices and Circuits | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEE-102 | Electromechanical Energy Conversion and Transformer | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEE-104 | Electromagnetic Field Theory | DCC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 4 | CHU-102 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | **Total** | | | **15** | **12** | **1** | **4** | | | | | | | |

## II Year

| | | | | | | | | Odd Semester | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Teaching Scheme | | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | | |
| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
| 1 | CEE-201 | Digital Circuits and System | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEE-203 | Control Systems | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEE-205 | Asynchronous and Synchronous Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-201 | Professional Ethics and Human Values | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | Total | | | 14 | 11 | 0 | 6 | | | | | | | |
| | | | | | | | | Even Semester | | | | | | |
| 1 | CEE-202 | Power Transmission and Distribution | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CEE-204 | Instrumentation and Measurement | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 3 | CEE-206 | Microcontrollers & Applications | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-202 | Engineering Economics | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | Total | | | 15 | 12 | 0 | 6 | | | | | | | |

## III Year

<table>
<tr><td colspan="19" align="center"><b>Odd Semester</b></td></tr>
<tr>
<td colspan="6" align="center">Teaching Scheme</td>
<td colspan="3" align="center">Contact Hours/Week</td>
<td colspan="2" align="center">Exam Duration (h)</td>
<td colspan="5" align="center">Relative Weights (%)</td>
</tr>
<tr>
<td>S. No.</td>
<td>Subject Code</td>
<td><b>Course Title</b></td>
<td>Subject Area</td>
<td>Credit</td>
<td>L</td>
<td>T</td>
<td>P</td>
<td>Theory</td>
<td>Practical</td>
<td>CWS</td>
<td>PRS</td>
<td>MTE</td>
<td>ETE</td>
<td>PRE</td>
</tr>
<tr>
<td>1</td><td>CEE-301</td><td>Power Electronics</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td>
</tr>
<tr>
<td>2</td><td>CEE-303</td><td>Power System Analysis</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td>
</tr>
<tr>
<td>3</td><td>CEE-3xx</td><td>Departmental Elective-1</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td>
</tr>
<tr>
<td>4</td><td>----</td><td>University Elective</td><td>UEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td>
</tr>
<tr>
<td colspan="4" align="center">Total</td><td>15</td><td>12</td><td>1</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>
</tr>
<tr><td colspan="15" align="center"><b>Even Semester</b></td></tr>
<tr>
<td>1</td><td>CEE-302</td><td>Renewable Energy Systems</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td>
</tr>
<tr>
<td>2</td><td>CEE-3xx</td><td>Department Elective -2</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td>
</tr>
<tr>
<td>3</td><td>CEE-3xx</td><td>Department Elective -3</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td>
</tr>
<tr>
<td>4</td><td>CEE-3xx</td><td>Department Elective -4</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td>
</tr>
<tr>
<td colspan="4" align="center">Total</td><td>15</td><td>12</td><td>2/0</td><td>2/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>
</tr>
</table>

## IV Year

<table>
<tr><th colspan="17">Odd Semester</th></tr>
<tr><th colspan="6">Teaching Scheme</th><th colspan="2">Contact Hours/Week</th><th colspan="2">Exam Duration (h)</th><th colspan="5">Relative Weights (%)</th></tr>
<tr><th>S. No.</th><th>Subject Code</th><th>Course Title</th><th>Subject Area</th><th>Credit</th><th>L</th><th>T</th><th>P</th><th>Theory</th><th>Practical</th><th>CWS</th><th>PRS</th><th>MTE</th><th>ETE</th><th>PRE</th></tr>
<tr><td>1</td><td>CEE-401</td><td>Utilization of Electrical Energy</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CEE-403</td><td>Electric Drives</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CEE-4xx</td><td>Department Elective -5</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>4</td><td>----</td><td>Department Elective -6</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>5</td><td>CEE-405</td><td>*B. Tech. Project</td><td></td><td>4</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td>40</td><td>60</td><td></td></tr>
<tr><td colspan="4">Total</td><td>19</td><td>12</td><td>1/0</td><td>4/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

*To be done at their place of work

<table>
<tr><th colspan="17">Even Semester</th></tr>
<tr><td>1</td><td>CEE-402</td><td>Switchgear and Protection</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CEE-4xx</td><td>Department Elective -7</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>3</td><td>CEE-4xx</td><td>Department Elective -8</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>4</td><td>CEE-404</td><td>*B. Tech. Project (Continued from 7th Sem)</td><td></td><td>8</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td>40</td><td>60</td><td></td></tr>
<tr><td colspan="4">Total</td><td>19</td><td>9</td><td>1/0</td><td>2/4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

*To be done at their place of work

# List of Departmental Elective Courses

| S. No. | Elective Code | Title of Elective | Elective no. |
|---|---|---|---|
| 1. | CEE-305 | Signals and Systems | DEC 1 |
| 2. | CEE-307 | Power Station Practices | |
| 3. | CEE-309 | Special Electrical Machines | |
| 4. | CEE-311 | Energy Efficient Motors | |
| 5. | CEE-313 | Linear Integrated Circuits | |
| 6. | CEE-315 | Digital Control and State Variable Analysis | |
| 7. | CEE-304 | Power System Operation and Control | DEC 2, DEC-3 and DEC 4 #UEC |
| 8. | CEE-306 | #Renewable Energy Systems | |
| 9. | CEE-308 | Power System Optimization | |
| 10. | CEE-310 | Power Electronic Applications to Power Systems | |
| 11. | CEE-312 | Electrical Energy Storage Systems | |
| 12. | CEE-314 | Switched Mode Power Supplies | |
| 13. | CEE-316 | VLSI Design | |
| 14. | CEE-318 | Communication Systems | |
| 15. | CEE-320 | Data Communication and Computer Networks | |
| 16. | CEE-322 | Digital System Design | |
| 17. | CEE-324 | #Utilization of Electrical Energy | |
| 18. | CEE-326 | Design of Electrical Machines | |
| 19. | CEE-328 | Advanced Topics in Electrical Machines | |
| 20. | CEE-330 | DSP Applications to Electromechanical Systems | |
| 21. | CEE-332 | AI and Expert Systems | |
| 22. | CEE-405 | Design, Estimation & Costing of Industrial Electrical Systems | DEC-5 and DEC 6 |
| 23. | CEE-407 | Power System Modeling & Simulation | |
| 24. | CEE-409 | Solar Photovoltaic and Wind Energy Conversion | |
| 25. | CEE-411 | Power System Reliability | |
| 26. | CEE-413 | Pulse Width Modulation for Power converters | |
| 27. | CEE-415 | SCADA & Energy Management Systems | |
| 28. | CEE-417 | Advanced Analog Circuit Design | |
| 29. | CEE-419 | Computer Architecture | |
| 30. | CEE-421 | HVDC | |
| 31. | CEE-406 | Power System Dynamics & Stability | DEC-7 and DEC 8 |
| 32. | CEE-406 | Distribution Systems Analysis & Control | |
| 33. | CEE-408 | Restructured Power Systems | |
| 34. | CEE-410 | Power System Planning | |
| 35. | CEE-412 | High Voltage Engineering | |
| 36. | CEE-414 | Distributed Generation | |
| 37. | CEE-416 | Grid Integration of Renewable Energy Sources | |
| 38. | CEE-418 | Selected Topics in Power Electronics | |
| 39. | CEE-420 | Power Quality | |
| 40. | CEE-422 | Energy Auditing, Energy Efficiency and Conservation | |
| 41. | CEE-424 | Flexible AC Transmission Systems | |
| 42. | CEE-426 | Micro Grid and Smart Grid | |

# DEPARTMENT OF MECHANICAL ENGINEERING

# BACHELOR OF TECHNOLOGY EVENING (MECHANICAL ENGINEERING)

## I Year

| S. No. | Subject Code | Course Title | Subject Area | Credit | L | T | P | Theory | Practical | CWS | PRS | MTE | ETE | PRE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Contact Hours/Week | | | Exam Duration (h) | | Relative Weights (%) | | | | |
| **Odd Semester** | | | | | | | | | | | | | | |
| 1 | CEE-105 | Electrical Technology | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CME-101 | Metallurgy | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 3 | CME-103 | Engineering Analysis and Design | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-101 | Communication Skills | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | Total | | | 14 | 11 | 0 | 6 | | | | | | | |
| **Even Semester** | | | | | | | | | | | | | | |
| 1 | CEC-106 | Electronics | AEC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 2 | CME-102 | Strength of Materials | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| 3 | CME-104 | Fluid Mechanics and Machines | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | - |
| 4 | CHU-102 | Fundamentals of Management | HMC | 3 | 3 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | - |
| | Total | | | 15 | 12 | 0 | 6 | | | | | | | |

## II Year

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| |

<table>
<tr><th colspan="16" align="center"><b>Odd Semester</b></th></tr>
<tr><th colspan="6" align="left">Teaching Scheme</th><th colspan="2">Contact Hours/Week</th><th colspan="2">Exam Duration (h)</th><th colspan="5">Relative Weights (%)</th></tr>
<tr><th>S. No.</th><th>Subject Code</th><th>Course Title</th><th>Subject Area</th><th>Credit</th><th>L</th><th>T</th><th>P</th><th>Theory</th><th>Practical</th><th>CWS</th><th>PRS</th><th>MTE</th><th>ETE</th><th>PRE</th></tr>
<tr><td>1</td><td>CME-201</td><td>Thermal Engineering - I</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CME-203</td><td>Theory of Machines</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CME-205</td><td>Production Technology - I</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>4</td><td>CHU-201</td><td>Professional Ethics and Human Values</td><td>HMC</td><td>2</td><td>2</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td colspan="4"><b>Total</b></td><td><b>14</b></td><td><b>11</b></td><td><b>0</b></td><td><b>6</b></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><th colspan="16" align="center"><b>Even Semester</b></th></tr>
<tr><td>1</td><td>CME-202</td><td>Thermal Engineering - II</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CME-204</td><td>Production Technology – II</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CME-206</td><td>Instrumentation</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>4</td><td>CHU-202</td><td>Engineering Economics</td><td>HMC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td colspan="4"><b>Total</b></td><td><b>15</b></td><td><b>12</b></td><td><b>0</b></td><td><b>6</b></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

## III Year

<table>
<tr><th colspan="16">Odd Semester</th></tr>
<tr><th colspan="7">Teaching Scheme</th><th colspan="2">Contact Hours/Week</th><th colspan="2">Exam Duration (h)</th><th colspan="5">Relative Weights (%)</th></tr>
<tr><th>S. No.</th><th>Subject Code</th><th>Course Title</th><th>Subject Area</th><th>Credit</th><th>L</th><th>T</th><th>P</th><th>Theory</th><th>Practical</th><th>CWS</th><th>PRS</th><th>MTE</th><th>ETE</th><th>PRE</th></tr>
<tr><td>1</td><td>CME-301</td><td>Heat Transfer</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CME-303</td><td>Refrigeration and Air Conditioning</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CME-3xx</td><td>Departmental Elective-1</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>4</td><td>----</td><td>University Elective</td><td>UEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td colspan="4">Total</td><td>15</td><td>12</td><td>2/0</td><td>4/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><th colspan="16">Even Semester</th></tr>
<tr><td>1</td><td>CME-302</td><td>Production Management</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>2</td><td>CME-3xx</td><td>Department Elective -2</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>3</td><td>CME-3xx</td><td>Department Elective -3</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>4</td><td>CME-3xx</td><td>Department Elective -4</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td colspan="4">Total</td><td>16</td><td>12</td><td>2/0</td><td>2/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

## IV Year

<table>
<tr><th colspan="18">Odd Semester</th></tr>
<tr><td colspan="6">Teaching Scheme</td><td colspan="3">Contact Hours/Week</td><td colspan="2">Exam Duration (h)</td><td colspan="5">Relative Weights (%)</td></tr>
<tr><td>S. No.</td><td>Subject Code</td><td>Course Title</td><td>Subject Area</td><td>Credit</td><td>L</td><td>T</td><td>P</td><td>Theory</td><td>Practical</td><td>CWS</td><td>PRS</td><td>MTE</td><td>ETE</td><td>PRE</td></tr>
<tr><td>1</td><td>CME-401</td><td>Flexible Manufacturing Systems</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td></td></tr>
<tr><td>2</td><td>CME-403</td><td>Machine Design</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CME-4xx</td><td>Department Elective -5</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>4</td><td>CME-4xx</td><td>Department Elective -6</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td></td></tr>
<tr><td>5</td><td>CME-405</td><td>*B. Tech. Project</td><td></td><td>4</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td>40</td><td>60</td><td></td></tr>
<tr><td colspan="4">Total</td><td>19</td><td>12</td><td>1/0</td><td>4/6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

*To be done at their place of work

<table>
<tr><th colspan="18">Even Semester</th></tr>
<tr><td>1</td><td>CME-402</td><td>Total Quality Management</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>-</td></tr>
<tr><td>3</td><td>CME-4xx</td><td>Department Elective -7</td><td>DEC</td><td>4</td><td>3</td><td>1/0</td><td>0/2</td><td>3</td><td>0</td><td>15/25</td><td>25/0</td><td>20/25</td><td>40/50</td><td>-</td></tr>
<tr><td>4</td><td>CME-4xx</td><td>Department Elective -8</td><td>DEC</td><td>3</td><td>3</td><td>0</td><td>0</td><td>3</td><td>0</td><td>25</td><td>0</td><td>25</td><td>50</td><td>-</td></tr>
<tr><td>5</td><td>CEE-404</td><td>*B. Tech. Project (Continued from 7th Sem)</td><td></td><td>8</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td>40</td><td>60</td><td></td></tr>
<tr><td colspan="4">Total</td><td>19</td><td>9</td><td>1/0</td><td>2/4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

*To be done at their place of work

# List of Departmental Elective Courses

| S. No. | Subject Code | Subject | |
|--------|--------------|---------|---|
| 1. | CME-305 | Operations Research | DEC -1 |
| 2. | CME-307 | Advanced Machining Process | |
| | | | |
| 3. | CME-304 | Power Plant Engineering | DEC -2 |
| 4. | CME -306 | Non-Conventional Energy Sources | |
| | | | |
| 5. | CME-308 | I.C. Engines | DEC-3 |
| 6. | CME-310 | Alternative Fuels Technology. | |
| | | | |
| 7. | CME-312 | Tool Engineering | DEC -4 |
| 8. | CME-314 | Supply Chain Management | |
| | | | |
| 9. | CME-405 | Product Design and Development | DEC -5 |
| 10. | CME-407 | Computer Aided Manufacturing | |
| | | | |
| 11. | CME-409 | Mechatronics | DEC -6 |
| 12. | CME-411 | Robotics & Automation. | |
| | | | |
| 13. | CME-406 | Automobile Engineering | DEC -7 |
| 14. | CME -408 | Gas Dynamics and Jet Propulsion | |
| | | | |
| 15. | CME-410 | Mechanical Vibrations | DEC-8 |
| 16. | CME-412 | Finite Element Method | |

# DELHI TECHNOLOGICAL UNIVERSITY

## Ordinance (1A)
*(for batches 2015-16 and onwards)*

### Preamble

There are following 12 Academic Departments in the University. The University offers 15 B.Tech program of four years duration, 4 B.Tech(Evening) programs of four years duration, 22 M.Tech programs of two years durations, 1 Master of Business Management program of two year duration, 1 Master of Business Management(Executive) and PhD programs for various Engineering, Science and Management disciplines.

## Academic Departments

| S. No. | Name of Department | Code | S. No. | Name of Department | Code |
|--------|--------------------|------|--------|--------------------|------|
| 1 | Applied Physics | AP | 7 | Electrical Engineering | EE |
| 2 | Applied Chemistry | AC | 8 | Electronics and Communication Engineering | EC |
| 3 | Applied Mathematics | MA | 9 | Environmental Engineering | EN |
| 4 | Biotechnology | BT | 10 | Humanities and Social Science | HU |
| 5 | Civil Engineering | CE | 11 | Mechanical Engineering | ME |
| 6 | Computer Science & Engineering | CO | 12 | Delhi School of Management | MG |

The Academic Departments offer courses to the students of various disciplines. Academic curricula are so devised that a student of one discipline can take some courses of other disciplines offering choice based credit system. Such flexibility helps a student to develop his core competence together with the interdisciplinary skills in the area of his/her interest.

## Programs

The main aim of education at DTU is to enable students to face the wide-ranging changes taking place in the fields of technology, environment and management with confidence. This includes undertaking design, development, construction, production, managerial and entrepreneurial activities, and higher studies in their chosen or allied interdisciplinary fields of study.

The University lays great emphasis on assisting students in the development of character on self-confidence with management traits. To achieve these goals the curriculum lays more stress on learning and less on teaching. Efforts are made to encourage self-learning, creative thinking, critical evaluation, spirit of inquiry and imbibing the culture of lifelong learning.

The University offers following under graduate programs (Table-1) leading to Bachelor of Technology degree in different disciplines.

## Table-1 UG Programs

| S.No. | Academic Program | Code | Duration (in Years) | Department |
|---|---|---|---|---|
| 1. | B.Tech. (Biotechnology) | BT | 4 | Biotechnology |
| 2. | B.Tech. (Civil Engineering) | CE | 4 | Civil Engineering |
| 3. | B.Tech. (Computer Science and Engineering) | CO | 4 | Computer Science and Engineering |
| 4. | B.Tech. (Electrical Engineering) | EE | 4 | Electrical Engineering |
| 5. | B.Tech. (Electrical and Electronics Engineering) | EL | 4 | Electrical Engineering |
| 6. | B.Tech. (Electronics & Communication Engineering) | EC | 4 | Electronics and Communication Engineering |
| 7. | B. Tech (Environmental Engineering) | EN | 4 | Environmental Engineering |
| 8. | B. Tech (Engineering Physics) | EP | 4 | Applied Physics |
| 9. | B. Tech (Information Technology) | IT | 4 | Computer Science and Engineering |
| 10. | B.Tech. (Mechanical Engineering) | ME | 4 | Mechanical Engineering |
| 11. | B.Tech. (Mechanical Engineering with Specialization in Automotive Engineering) | AE | 4 | Mechanical Engineering |
| 12. | B. Tech (Mathematics and Computing) | MC | 4 | Applied Mathematics |
| 13. | B.Tech. (Production and Industrial Engineering) | PE | 4 | Mechanical Engineering |
| 14. | B.Tech. (Polymer Science and Technology) | PT | 4 | Applied Chemistry |
| 15. | B. Tech (Software Engineering) | SE | 4 | Computer Science and Engineering |

## Structure of Undergraduate programs

The four year B.Tech programs compromise of courses divided in six distinct areas, namely: Departmental Core (DCC), Departmental Elective (DEC), Allied Engineering (AEC), Applied Sciences and Mathematics (ASC), Humanities, Social Sciences and Management(HMC)and University Electives(UEC). All the courses offered in First year B. Tech programs are categorized as 'Common Courses' for all the academic programs.

Credits assigned to various components of the B. Tech curriculum are given in Table-2. Credit and curricular components for common courses and University elective courses are given in the Table 3 and Table 4 respectively.

## Common Courses

The courses offered to the First Year B.Tech programs are grouped under this category. All the students need to complete these common courses in First year. These courses have been divided into two groups namely Group A and Group B. Different departments have participated in design of these courses so as to cater to the requirement of their program(s) with the parent departments. These courses are planned to give the students a firm base in the areas of Applied Science, Applied Mathematics, Humanities and Allied Engineering disciplines. These courses are presented in Table-3.

## University Elective Courses

The University Electives are the courses offered by different academic Departments to the students of other disciplines. These courses are offered in either V/VI semester. A student must opt for a University elective course which is offered by any academic department other than his own. The University elective courses are shown in Table-4.

## Departmental Core Courses (DCC)

The departmental core consists of (15-16) courses considered essential for a chosen engineering/science discipline including, engineering design, seminar, industrial training and project.

**Departmental Elective Courses (DEC)**

The students are required to complete a number of Departmental Elective courses (7-8) offered by his/her parent department. Every Department offers a wide variety of elective courses under this category.

**Humanities, Social Sciences and Management Courses (HMC)**

The Humanities, Social Sciences and Management Courses consists of a 5 courses considered essential for a B.Tech program to inculcate the essence of technical writing, communication skills, economics and analysis, management and professional ethics & human values.

**Applied Sciences and Mathematics Courses (ASC)**

The Applied Sciences and Mathematics Courses consists of a 5 courses considered essential for a B.Tech program to build the background for learning of engineering core courses.

**Allied Engineering Courses (AEC)**

The students are required to complete at least 7-8 number of Allied engineering courses (majority of them taught as common courses) offered by engineering departments other than his/her parent department. These courses expose the student with wide spectrum knowledge of allied engineering domain connected to the main engineering stream of the course of study of the students of concerned departments.

**Table 2 Credits of different curricular components**

| CURRICULAR COMPONENTS | | Credits |
|---|---|---|
| **(a)** | **Common Courses (First Year)** | |
| i. | Humanities, Social Sciences and Management (HMC) | 03 |
| ii. | Applied Sciences and Mathematics (ASC) | 20 |
| iii. | Allied Engineering (AEC) | 19 |
| | Total | **42** |
| **(b) Departmental Core Courses (DCC)** | | |
| i. | Core Courses | 60-64 |
| iii. | Engineering Analysis and Design | 04 |
| vi. | B.Tech Project | 12 |
| viii. | Industrial Training | 02 |
| | Total | **78-82** |
| **(c) Humanities, Social Sciences and Management Courses (HMC)** *(other than Common Courses)* | | |
| i. | Humanities and Social Sciences | 05 |
| ii. | Management Studies | 03 |
| iii. | Professional Ethics and Human Values | 02 |
| | Total | **10** |
| **(d)Allied Engineering Courses (AEC)** | | **08** |
| **(d)** | **University Elective Course (UEC)** | **03** |
| **(e) Departmental Elective Courses (DEC)** | | **32-28** |
| | Grand Total | 173 |

## Table -3 Common Courses for B.Tech Programs

**Year: I      Semester – I**

| S. No. | Course Title | Subject Area | Credit | Contact Hrs/Week | | | |
|---|---|---|---|---|---|---|---|
| | | | | L | T | P | Total |
| **Group A** | | | | | | | |
| 1 | Mathematics – I | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – I | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Chemistry | ASC | 4 | 3 | 0 | 2 | 5 |
| 4 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 4 |
| 5 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 3 |
| 6 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 |
| | **Total** | | **21** | **16** | **1** | **7** | **24** |
| **Group B** | | | | | | | |
| 1 | Mathematics – I | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – I | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 5 |
| 4 | Programming and Data Structure | AEC | 4 | 3 | 0 | 2 | 5 |
| 5 | Engineering Graphics | AEC | 2 | 1 | 0 | 3 | 4 |
| 6 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 |
| | **Total** | | **21** | **16** | **1** | **9** | **26** |

**Year: I      Semester-II**

| S. No. | Course Title | Subject Area | Credit | Contact Hours/Week | | | |
|---|---|---|---|---|---|---|---|
| | | | | L | T | P | Total |
| **Group A** | | | | | | | |
| 1 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – II | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 5 |
| 4 | Programming and Data Structure | AEC | 4 | 3 | 0 | 2 | 5 |
| 5 | Engineering Graphics | AEC | 3 | 1 | 0 | 3 | 4 |
| 6 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 |
| | **Total** | | **22** | **16** | **1** | **9** | **26** |
| **Group B** | | | | | | | |
| 1 | Mathematics -II | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – II | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Chemistry | ASC | 4 | 3 | 0 | 2 | 5 |
| 4 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 4 |
| 5 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 3 |
| 6 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 |
| | **Total** | | **21** | **16** | **1** | **7** | **24** |

## Table-4 University Elective Courses

| S.No. | SUBJECT CODE | SUBJECTS |
|---|---|---|
| 1. | CO351 | Enterprise & Java Programming |
| 2. | CO353 | E-commerce & ERP |
| 3. | CO355 | Cryptography & Information Security |
| 4. | CO357 | Operating System |
| 5. | CO359 | Intellectual Property Rights & Cyber Laws |
| 6. | EC351 | Mechatronics |
| 7. | EC353 | Computer Vision |
| 8. | EC355 | Embedded System |
| 9. | EC 357 | Digital Image Processing |
| 10. | EC359 | VLSI Design |
| 11. | EE351 | Power Electronics Systems |
| 12. | EE353 | Electrical Machines and Power Systems |
| 13. | EE355 | Instrumentation Systems |
| 14. | EE357 | Utilization of Electrical Energy |
| 15. | EE359 | Non-conventional Energy Systems |
| 16. | EE361 | Embedded Systems |
| 17. | EN351 | Environmental Pollution & E- Waste Management |
| 18. | EN353 | Occupational Health & Safety Management |
| 19. | EN355 | GIS & Remote Sensing |
| 20. | EP351 | Physics of Engineering Materials |
| 21. | EP353 | Nuclear Security |
| 22. | HU351 | Econometrics |
| 23. | MA351 | History Culture & Excitement of Mathematics |
| 24. | ME351 | Power Plant Engineering |
| 25. | ME353 | Renewable Sources of Energy |
| 26. | ME355 | Combustion Generated Pollution |
| 27. | ME357 | Thermal System |
| 28. | ME359 | Refrigeration & Air Conditioning |
| 29. | ME361 | Industrial Engineering |
| 30. | ME363 | Product Design & Simulation |
| 31. | ME365 | Computational fluid dynamics |
| 32. | ME367 | Finite Element Methods |
| 33. | ME369 | Total Life Cycle Management |
| 34. | ME371 | Value Engineering |
| 35. | MG351 | Fundamentals of Financial Accounting and Analysis |
| 36. | MG353 | Fundamentals of Marketing |
| 37. | MG355 | Human Resource Management |
| 38. | MG357 | Knowledge and Technology Management |
| 39. | PE351 | Advance Machining Process |
| 40. | PE 353 | Supply Chain Management |
| 41. | PE355 | Work Study Design |
| 42. | PE357 | Product Design & Simulation |
| 43. | PE359 | Total Life Cycle Management |
| 44. | PE361 | Total Quality Management |
| 45. | PT361 | High Performance Polymers |
| 46. | PT363 | Separation Technology |
| 47. | PT365 | Non-Conventional Energy |
| 48. | PT367 | Polymer Waste Management |
| 49. | PT369 | Nanotechnology in Polymers |
| 50. | PT371 | Applications of Polymer Blends and Composite |

## Course Coding

A course is identified by a course code designated by a string of alpha-numeric characters and a course title. In a course code, first two letters of the string indicate the Academic Department/Program code offering the course and the last three numbers designate particular course.

## Course Number

For all the courses, the first digit corresponds to the level (year) at which a course is normally offered. The last two digits denote the number of the course, which will usually be odd for course offered in the Odd Semester and even for courses in the Even Semester. For example, the course, "Network Analysis and Synthesis, offered to Electrical Engineering students in second year Odd Semester' is numbered as EE201.

## Abbreviations and Notations

## Credits: Cr

## Teaching Engagements

Every course maintains a teaching schedule for which weekly contact hours are decided for delivering lectures (L), engaging tutorials (T) and/or performing practicals(P) to make learning in a course more effective. In the syllabi, the information regarding number of course credits and contact hours per week is denoted as: **Credits (L – T – P) ;    4 (3 – 1 -0)**

## Weights for Course Evaluation

Evaluation in every course is based on the weights assigned to various components of the course curriculum. These components are designated as under :

| | |
|---|---|
| CWS | Class Work Sessional |
| MTE | Mid Term Examination |
| PRE | Practical Examination |
| PRS | Practical Sessional |
| ETE | End Term Examination |

In general, the relative weights assigned to different components of the entire course are as given in the table below:

| S.NO. | Course Type | | | Examination | | Relative Weights | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | P | TH | PR | CWS | PRS | MTE | ETE | PRE |
| 1. | 2 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | |
| 2. | 3 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 3. | 4 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | |
| 4. | 3 | 1 | 0 | Yes | -- | 25 | -- | 25 | 50 | |
| 5. | 3 | 0 | 2 | Yes | No | 15 | 25 | 20 | 40 | -- |
| 6. | 3 | 0 | 2 | Yes | No | 15 | 15 | 30 | 40 | |
| 7. | 2 | 1 | 2 | Yes | No | 15 | 25 | 20 | 40 | -- |
| 8. | 2 | 1 | 2 | Yes | No | 15 | 15 | 30 | 40 | -- |
| 9. | 0 | 0 | 3 | -- | Yes | -- | 25 | 25 | -- | 50 |
| 10. | 0 | 0 | 6 | -- | Yes | -- | 50 | -- | -- | 50 |

Some examples are given below 'MA-101: Mathematics-I refers to a course offered by the Department of Applied mathematics to the students of first year of the B.Tech programs and is offered

in the Odd semester and **AP-102: Physics-II** refers to a course offered by the Department of Applied Physics to the students of first year of the B.Tech programs and is offered in the even semester

| S.No | Teaching Scheme | | | | Contact Hours/Week | | | Exam Duration (HR) | | Relative Weights | | | | |
|------|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Subject Code | Course Title | Subject Area | Credits | L | T | P | TH | P | CWS | PRS | MTE | ETE | PRE |
| 1. | MA101 | Mathematics-I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | -- | 25 | 50 | -- |
| 2. | AP102 | Physics-II | ASC | 4 | 3 | 0 | 2 | 3 | -- | 15 | 15 | 30 | 40 | -- |

## Credit System

The University follows a modern methods of continuous evaluation, which is prevalent in most of the professional institutions nationally and internationally, through a credit system in all its, programs. The system offers flexibility to progress at a pace commensurate with the capabilities of a student to minimum credit requirements. The award system follows letter grades on a 10-point scale, where the performance is measured in terms of weighted grade point averages (SGPA and CGPA). A student has to satisfy minimum CGPA and earned credit requirements to be eligible for the award of degree (Table-2).

## ORDINANCE FOR THE UNDERGRADUATE (UG) PROGRAMS

| **Short Title & Commencement** | 1 | (i) | This Ordinance shall be called the Ordinance 1A meant for the four-year Undergraduate Program of the Delhi Technological University for batches 2015-16 onwards. |
|---|---|---|---|
| | | (ii) | This Ordinance shall come into force with effect from such date as they are notified. |
| **Definitions (Unless the Context requires otherwise)** | 2 | (i) | "Applicant" shall mean an individual who applies for admission to any undergraduate (UG) program of the University; |
| | | (ii) | "Academic Centre" means centre established in the university for running the academic and research activities |
| | | (iii) | "AC" and "Council" shall mean the Academic Council of the Delhi Technological University; |
| | | (iv) | "Academic Program" includes a program of courses or any other component leading to a Bachelors degree. |
| | | (v) | "BoM" shall mean the Board of Management of the University. |
| | | (vi) | "BoS" means Board of Studies of the concerned Department |
| | | (vii) | "CGPA" shall mean the Cumulative grade point average; |
| | | (viii) | "Coordination Committee" shall mean the committee of the faculty members involved in a course; |
| | | (ix) | "COE" means Controller of Examination of the University |
| | | (x) | "Course" shall mean a curriculum component of the academic program identified by a designated code number, a title and specific credit assigned to it. |
| | | (xi) | "Course Coordinator" shall mean a faculty member who shall have full responsibility for the course; coordinating the work of faculty member(s) involved in that course, including examinations and the award of grades; |

| | | | |
|---|---|---|---|
| | | (xii) | **"DA-UG"** shall mean the Dean, Academics (UG); |
| | | (xiii) | **"Degree"** shall mean the Bachelor of Technology degree viz. B.Tech degree of the University as may be approved by the BoM from time to time. |
| | | (xiv) | **"DOSW"** shall mean the Dean of Students Welfare. |
| | | (xv) | **"Faculty Advisor"** shall mean a teacher nominated by the Department to advise a student on the courses to be taken by him and other matters related to the academic program; |
| | | (xvi) | **"Grade Moderation Committee"** shall mean the committee appointed by the BoS to moderate grades awarded by the Course Coordinators in different courses in a semester at a given level of a curriculum; |
| | | (xvii) | **"JEE"** shall mean the Joint Entrance Examination (Main) for admission to undergraduate (B.Tech.) program of the Delhi Technological University. |
| | | (xviii) | **"NRI Student"** shall mean the student who is admitted against NRI/PIO/FN category. |
| | | (xix) | **"OBC"** shall mean the other backward classes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| | | (xx) | **"PD"** shall mean the persons with disability as specified by the Government of India from time to time; |
| | | (xxi) | **"Registration"** means registration for course or semester at the start of the semester of any program of the university |
| | | (xxii) | **"SC/ST"** shall mean the scheduled castes and scheduled tribes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| | | (xxiii) | **"Scheme of Teaching and Examination"** shall mean the scheme of teaching and examination for a branch of study as approved by the BoM; |
| | | (xxiv) | **"SGPA"** shall mean the semester grade point average; |
| | | (xxv) | **"Student"** shall mean a student registered for an undergraduate program for full-time study leading to the B. Tech. degree. |
| | | (xxvi) | **"UG"** shall mean the Under Graduate; |
| | | (xxvii) | **"UG Program"** shall mean a program of courses and /or any other component leading to the Bachelor of Technology degree in a specified discipline/branch. |
| | | (xxviii) | **"University"** shall mean the Delhi Technology University |
| | | (xix) | **"UTTC"** shall mean University Time Table Committee; |
| | | | Note : 'He" and 'His' imply 'he/she' and his/her', respectively; |
| **Ordinance** | **(3)** | (1) | The University shall offer such UG Program and of such minimum duration as the BoM may approve on the recommendation of the AC either on its own or on the initiative of a Department/Academic Centre, and/or on the direction of the BoM. |
| | | (2) | The procedure for staring a new program, temporarily suspending a program or phasing out a program shall be such, as may be laid down in the Regulations |
| | | (3) | The minimum entry qualifications and the policy and procedure of admission to UG program shall be such as may be |

| | | | |
|---|---|---|---|
| | | | approved by the AC and BoM |
| | | (4) | A UG student shall be required to earn a **minimum** number of credits through various curricular components **like** teaching /laboratory courses, seminar, industrial **training, project** etc. at the University or at such other **institutions as have** been approved by the University. |
| | | (5) | A UG student shall be required to **complete** all the requirements for the award of the Bachelors **Degree** within such period as may be specified in the Regulations. |
| | | (6) | The date of initial registration for the UG program shall normally be the date on which the student **formally** registers for the first time. This date shall be construed as the date of joining the program for all intents and purposes. |
| | | (7) | A student shall be required normally to attend every lecture, tutorial and laboratory class. However, for late registration, sickness or other such exigencies, absence may be allowed as provided for in the Regulations. |
| | | (8) | A UG student may be granted such scholarship/ Studentship/ assistantship/ stipend, etc. and awarded such prizes and medals as may be specified in the Regulations in accordance with the directions of the Government of India and/or the decision of the AC/ BoM. |
| | | (9) | The procedure for the withdrawal from a UG program rejoining the program, the award of grades and the SGPA/CGPA the examination and all such matters as may be connected with the running of a program shall be such as may be specified in the Regulations. |
| | | (10) | The award of the UG degree to an eligible candidate shall be made in accordance with the procedure laid down in the Regulations. |
| | | (11) | Notwithstanding anything contained in the above Ordinances, no Regulations shall be made in contravention of the decision of the BoM/ AC in regard to the duration of the program and the number of studentships and the procedure of admission and the percentage of students of various categories, viz. reserved (SC/ST. OBC, PD, NRI/FN/PIO) and unreserved categories. The Regulations for the UG program shall be approved by the AC and the BoM. |
| | | (12) | In special circumstances, the Chairman of the BoM may, on behalf of the BoM, approve amendment, modification, insertion or deletion of an Ordinance(s), which in his opinion is necessary or expedient for the smooth running of a program: Provided that all such changes shall be reported to the BoM in its next meeting for approval. |

# DELHI TECHNOLOGICAL UNIVERSITY

## Regulations for Ordinance (1A)
*(for batches 2015-16 and onwards)*

## Preamble

There are following 12 **Academic Departments in the** University. **The University offers** 15 B.Tech program of four years duration, 4 B.Tech(Evening) programs of **four** years duration, 22 M.Tech programs of two years durations, 1 Master of Business Management program of two year duration, 1 Master of Business Management(Executive) and PhD programs **for** various Engineering, Science and Management disciplines.

## Academic Departments

| S. No. | Name of Department | Code | S. No. | Name of Department | Code |
|--------|--------------------|------|--------|--------------------|------|
| 1 | Applied Physics | AP | 7 | Electrical Engineering | EE |
| 2 | Applied Chemistry | AC | 8 | Electronics and Communication Engineering | EC |
| 3 | Applied Mathematics | MA | 9 | Environmental Engineering | EN |
| 4 | Biotechnology | BT | 10 | Humanities and Social Science | HU |
| 5 | Civil Engineering | CE | 11 | Mechanical Engineering | ME |
| 6 | Computer Science & Engineering | CO | 12 | Delhi School of Management | MG |

The Academic Departments offer courses to the students of various disciplines. Academic curricula are so devised that a student of one discipline can take some courses of other disciplines offering choice based credit system. Such flexibility helps a student to develop his core competence together with the interdisciplinary skills in the area of his/her interest.

## Programs

The main aim of education at DTU is to enable students to face the wide-ranging changes taking place in the fields of technology, environment and management with confidence. This includes undertaking design, development, construction, production, managerial and entrepreneurial activities, and higher studies in their chosen or allied interdisciplinary fields of study.

The University lays great emphasis on assisting students in the development of character on self-confidence with management traits. To achieve these goals the curriculum lays more stress on learning and less on teaching. Efforts are made to encourage self-learning, creative thinking, critical evaluation, spirit of inquiry and imbibing the culture of lifelong learning.

The University offers following under graduate programs (Table-1) leading to Bachelor of Technology degree in different disciplines.

## Table-1 UG Programs

| S.No. | Academic Program | Code | Duration (in Years) | Department |
|---|---|---|---|---|
| 1. | B.Tech. (Biotechnology) | BT | 4 | Biotechnology |
| 2. | B.Tech. (Civil Engineering) | CE | 4 | Civil Engineering |
| 3. | B.Tech. (Computer Science and Engineering) | CO | 4 | Computer Science and Enginee  ng |
| 4. | B.Tech. (Electrical Engineering) | EE | 4 | Electrical Engineering |
| 5. | B.Tech. (Electrical and Electronics Engineering) | EL | 4 | Electrical Engineering |
| 6. | B.Tech. (Electronics & Communication Engineering) | EC | 4 | Electronics and Communica Engineering |
| 7. | B. Tech (Environmental Engineering) | EN | 4 | Environmental Engineering |
| 8. | B. Tech (Engineering Physics) | EP | 4 | Applied Physics |
| 9. | B. Tech (Information Technology) | IT | 4 | Computer Science and Engineering |
| 10. | B.Tech. (Mechanical Engineering) | ME | 4 | Mechanical Engineering |
| 11. | B.Tech. (Mechanical Engineering with Specialization in Automotive Engineering) | AE | 4 | Mechanical Engineering |
| 12. | B. Tech (Mathematics and Computing) | MC | 4 | Applied Mathematics |
| 13. | B.Tech. (Production and Industrial Engineering) | PE | 4 | Mechanical Engineering |
| 14. | B.Tech. (Polymer Science and Technology) | PT | 4 | Applied Chemistry |
| 15. | B. Tech (Software Engineering) | SE | 4 | Computer Science and Engineering |

## Structure of Undergraduate programs

The four year B.Tech programs compromise of courses divided in six distinct areas, namely: Departmental Core (DCC), Departmental Elective (DEC), Allied Engineering (AEC), Appli Sciences and Mathematics (ASC), Humanities, Social Sciences and Management(HMC)and University Electives(UEC). All the courses offered in First year B. Tech programs are categorized as **'Common Courses'** for all the academic programs.

Credits assigned to various components of the B. Tech curriculum are given in Table-2. Credit a  curricular components for common courses and University elective courses are given in the Table 3 and Table 4 respectively.

## Common Courses

The courses offered to the First Year B.Tech programs are grouped under this category. All the students need to complete these common courses in First year. These courses have been divided in two groups namely Group A and Group B. Different departments have participated in design of the courses so as to cater to the requirement of their program(s) with the parent departments. These courses are planned to give the students a firm base in the areas of Applied Science, Applied Mathematics, Humanities and Allied Engineering disciplines. These courses are presented in Table-2

## University Elective Courses

The University Electives are the courses offered by different academic Departments to the students other disciplines. These courses are offered in either V/VI semester. A student must opt for a University elective course which is offered by any academic department other than his own. The University elective courses are shown in Table-4.

## Departmental Core Courses (DCC)

The departmental core consists of (15-16) courses considered essential for a chos engineering/science discipline including, engineering design, seminar, industrial training and project

2 —124—

## Departmental Elective Courses (DEC)

The students are required to complete a number of Departmental Elective courses (7-8) offered by his/her parent department. Every Department offers a wide variety of elective courses under this category.

## Humanities, Social Sciences and Management Courses (HMC)

The Humanities, Social Sciences and Management Courses consists of a 5 courses considered essential for a B.Tech program to inculcate the essence of technical writing, communication skills, economics and analysis, management and professional ethics & human values.

## Applied Sciences and Mathematics Courses (ASC)

The Applied Sciences and Mathematics Courses consists of a 5 courses considered essential for a B.Tech program to build the background for learning of engineering core courses.

## Allied Engineering Courses (AEC)

The students are required to complete at least 7-8 number of Allied engineering courses (majority of them taught as common courses) offered by engineering departments other than his/her parent department. These courses expose the student with wide spectrum knowledge of allied engineering domain connected to the main engineering stream of the course of study of the students of concerned departments.

### Table 2 Credits of different curricular components

| CURRICULAR COMPONENTS | | Credits |
|---|---|---|
| (a) | Common Courses (First Year) | |
| i. | Humanities, Social Sciences and Management (HMC) | 03 |
| ii. | Applied Sciences and Mathematics (ASC) | 20 |
| iii. | Allied Engineering (AEC) | 19 |
| | Total | **42** |
| (b) Departmental Core Courses (DCC) | | |
| i. | Core Courses | 60-64 |
| iii. | Engineering Analysis and Design | 04 |
| vi. | B.Tech Project | 12 |
| viii. | Industrial Training | 02 |
| | Total | **78-82** |
| (c) Humanities, Social Sciences and Management Courses (HMC) (*other than Common Courses*) | | |
| i. | Humanities and Social Sciences | 05 |
| ii. | Management Studies | 03 |
| iii. | Professional Ethics and Human Values | 02 |
| | Total | **10** |
| (d)Allied Engineering Courses (AEC) | | **08** |
| (d) | University Elective Course (UEC) | **03** |
| (e) Departmental Elective Courses (DEC) | | **32-28** |
| | Grand Total | **173** |

## Table -3 Common Courses for B.Tech Programs

**Year: I          Semester – I**

| S. No. | Course Title | Subject Area | Credit | L | T | P | Total |
|--------|--------------|--------------|--------|---|---|---|-------|
| Group A | | | | | | | |
| 1 | Mathematics – I | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – I | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Chemistry | ASC | 4 | 3 | 0 | 2 | 5 |
| 4 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 4 |
| 5 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 3 |
| 6 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 |
| | Total | | 21 | 16 | 1 | 7 | 24 |
| Group B | | | | | | | |
| 1 | Mathematics – I | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – I | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 5 |
| 4 | Programming and Data Structure | AEC | 4 | 3 | 0 | 2 | 5 |
| 5 | Engineering Graphics | AEC | 2 | 1 | 0 | 3 | 4 |
| 6 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 |
| | Total | | 21 | 16 | 1 | 9 | 26 |

**Year: I          Semester-II**

| S. No. | Course Title | Subject Area | Credit | L | T | P | Total |
|--------|--------------|--------------|--------|---|---|---|-------|
| Group A | | | | | | | |
| 1 | Mathematics - II | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – II | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Basic Electrical Engineering | AEC | 4 | 3 | 0 | 2 | 5 |
| 4 | Programming and Data Structure | AEC | 4 | 3 | 0 | 2 | 5 |
| 5 | Engineering Graphics | AEC | 3 | 1 | 0 | 3 | 4 |
| 6 | Introduction to Environmental Science | AEC | 3 | 3 | 0 | 0 | 3 |
| | Total | | 22 | 16 | 1 | 9 | 26 |
| Group B | | | | | | | |
| 1 | Mathematics -II | ASC | 4 | 3 | 1 | 0 | 4 |
| 2 | Physics – II | ASC | 4 | 3 | 0 | 2 | 5 |
| 3 | Chemistry | ASC | 4 | 3 | 0 | 2 | 5 |
| 4 | Basic Mechanical Engineering | AEC | 4 | 4 | 0 | 0 | 4 |
| 5 | Workshop Practice | AEC | 2 | 0 | 0 | 3 | 3 |
| 6 | Communication Skills | HMC | 3 | 3 | 0 | 0 | 3 |
| | Total | | 21 | 16 | 1 | 7 | 24 |

# Table-4 University Elective Courses

| S.No. | SUBJECT CODE | SUBJECTS |
|-------|--------------|----------|
| 1. | CO351 | Enterprise & Java Programming |
| 2. | CO353 | E-commerce & ERP |
| 3. | CO355 | Cryptography & Information Security |
| 4. | CO357 | Operating System |
| 5. | CO359 | Intellectual Property Rights & Cyber Laws |
| 6. | EC351 | Mechatronics |
| 7. | EC353 | Computer Vision |
| 8. | EC355 | Embedded System |
| 9. | EC 357 | Digital Image Processing |
| 10. | EC359 | VLSI Design |
| 11. | EE351 | Power Electronics Systems |
| 12. | EE353 | Electrical Machines and Power Systems |
| 13. | EE355 | Instrumentation Systems |
| 14. | EE357 | Utilization of Electrical Energy |
| 15. | EE359 | Non-conventional Energy Systems |
| 16. | EE361 | Embedded Systems |
| 17. | EN351 | Environmental Pollution & E- Waste Management |
| 18. | EN353 | Occupational Health & Safety Management |
| 19. | EN355 | GIS & Remote Sensing |
| 20. | EP351 | Physics of Engineering Materials |
| 21. | EP353 | Nuclear Security |
| 22. | HU351 | Econometrics |
| 23. | MA351 | History Culture & Excitement of Mathematics |
| 24. | ME351 | Power Plant Engineering |
| 25. | ME353 | Renewable Sources of Energy |
| 26. | ME355 | Combustion Generated Pollution |
| 27. | ME357 | Thermal System |
| 28. | ME359 | Refrigeration & Air Conditioning |
| 29. | ME361 | Industrial Engineering |
| 30. | ME363 | Product Design & Simulation |
| 31. | ME365 | Computational fluid dynamics |
| 32. | ME367 | Finite Element Methods |
| 33. | ME369 | Total Life Cycle Management |
| 34. | ME371 | Value Engineering |
| 35. | MG351 | Fundamentals of Financial Accounting and Analysis |
| 36. | MG353 | Fundamentals of Marketing |
| 37. | MG355 | Human Resource Management |
| 38. | MG357 | Knowledge and Technology Management |
| 39. | PE351 | Advance Machining Process |
| 40. | PE 353 | Supply Chain Management |
| 41. | PE355 | Work Study Design |
| 42. | PE357 | Product Design & Simulation |
| 43. | PE359 | Total Life Cycle Management |
| 44. | PE361 | Total Quality Management |
| 45. | PT361 | High Performance Polymers |
| 46. | PT363 | Separation Technology |
| 47. | PT365 | Non-Conventional Energy |
| 48. | PT367 | Polymer Waste Management |
| 49. | PT369 | Nanotechnology in Polymers |
| 50. | PT371 | Applications of Polymer Blends and Composite |

## Course Coding

A course is identified by a course code designated by a string of alpha-numeric characters and a course title. In a course code, first two letters of the string indicate the Academic Department/Program code offering the course and the last three numbers designate particular course.

## Course Number

For all the courses, the first digit corresponds to the level (year) at which a course is normally offered. The last two digits denote the number of the course, which will usually be odd for courses offered in the Odd Semester and even for courses in the Even Semester. For example, the course, "Network Analysis and Synthesis, offered to Electrical Engineering students in second year Odd Semester' is numbered as EE201.

## Abbreviations and Notations

## Credits: Cr

## Teaching Engagements

Every course maintains a teaching schedule for which weekly contact hours are decided for delivering lectures (L), engaging tutorials (T) and/or performing practicals(P) to make learning in a course more effective. In the syllabi, the information regarding number of course credits and contact hours per week is denoted as: **Credits (L – T – P) ;    4 (3 – 1 -0)**

## Weights for Course Evaluation

Evaluation in every course is based on the weights assigned to various components of the course curriculum. These components are designated as under :

| CWS | Class Work Sessional |
|---|---|
| MTE | Mid Term Examination |
| PRE | Practical Examination |
| PRS | Practical Sessional |
| ETE | End Term Examination |

In general, the relative weights assigned to different components of the entire course are as given in the table below:

| S.NO. | Course Type | | | Examination | | Relative Weights | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | P | TH | PR | CWS | PRS | MTE | ETE | PRE |
| 1. | 2 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | - |
| 2. | 3 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 3. | 4 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 4. | 3 | 1 | 0 | Yes | -- | 25 | -- | 25 | 50 | - |
| 5. | 3 | 0 | 2 | Yes | No | 15 | 25 | 20 | 40 | -- |
| 6. | 3 | 0 | 2 | Yes | No | 15 | 15 | 30 | 40 | - |
| 7. | 2 | 1 | 2 | Yes | No | 15 | 25 | 20 | 40 | -- |
| 8. | 2 | 1 | 2 | Yes | No | 15 | 15 | 30 | 40 | -- |
| 9. | 0 | 0 | 3 | -- | Yes | -- | 25 | 25 | -- | 5 |
| 10. | 0 | 0 | 6 | -- | Yes | -- | 50 | -- | -- | 50 |

Some examples are given below 'MA-101: Mathematics-I refers to a course offered by the Department of Applied mathematics to the students of first year of the B.Tech programs and is offered

in the Odd semester and **AP-102: Physics-II** refers to a course offered by the Department of Applied Physics to the students of first year of the B.Tech programs and is offered in the even semester

| S.No. | Teaching Scheme | | | | Contact Hours/Week | | | Exam Duration (HR) | | Relative Weights | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Subject Code | Course Title | Subject Area | Credits | L | T | P | TH | P | CWS | PRS | MTE | ETE | PRE |
| 1. | MA101 | Mathematics-I | ASC | 4 | 3 | 1 | 0 | 3 | 0 | 25 | -- | 25 | 50 | -- |
| 2. | AP102 | Physics-II | ASC | 4 | 3 | 0 | 2 | 3 | -- | 15 | 15 | 30 | 40 | -- |

**Credit System**

The University follows a modern methods of continuous evaluation, which is prevalent in most of the professional institutions nationally and internationally, through a credit system in all its, programs. The system offers flexibility to progress at a pace commensurate with the capabilities of a student to minimum credit requirements. The award system follows letter grades on a 10-point scale, where the performance is measured in terms of weighted grade point averages (SGPA and CGPA). A student has to satisfy minimum CGPA and earned credit requirements to be eligible for the award of degree (Table-2).

| | Definitions |
|---|---|
| | *(Unless the Context requires otherwise)* |
| (i) | **"Applicant"** shall mean an individual who applies for admission to any undergraduate (UG) program of the University; |
| (ii) | **"Academic Centre"** means centre established in the university for running the academic and research activities |
| (iii) | **"AC" and "Council"** shall mean the Academic Council of the Delhi Technological University; |
| (iv) | **"Academic Program"** includes a program of courses or any other component leading to a Bachelors degree. |
| (v) | **"BoM"** shall mean the Board of Management of the University. |
| (vi) | **"BoS"** means Board of Studies of the concerned Department |
| (vii) | **"CGPA"** shall mean the Cumulative grade point average; |
| (viii) | **"Coordination Committee"** shall mean the committee of the faculty members involved in a course; |
| (ix) | **"COE"** means Controller of Examination of the University |
| (x) | **"Course"** shall mean a curriculum component of the academic program identified by a designated code number, a title and specific credit assigned to it. |
| (xi) | **"Course Coordinator"** shall mean a faculty member who shall have full responsibility for the course; coordinating the work of faculty member(s) involved in that course, including examinations and the award of grades; |
| (xii) | **"DA-UG"** shall mean the Dean, Academics (UG); |
| (xiii) | **"Degree"** shall mean the Bachelor of Technology degree viz. B.Tech degree of the University as may be approved by the BoM from time to time. |
| (xiv) | **"DOSW"** shall mean the Dean of Students Welfare. |
| (xv) | **"Faculty Advisor"** shall mean a teacher nominated by the Department to advise a student on the courses to be taken by him and other matters related to the academic program; |
| (xvi) | **"Grade Moderation Committee"** shall mean the committee appointed by the BoS to moderate grades awarded by the Course Coordinators in different courses in a semester at a given level of a curriculum; |

| | |
|---|---|
| (xvii) | **"JEE"** shall mean the Joint Entrance Examination (Main) for admission to undergraduate (B.Tech.) program of the Delhi Technological University. |
| (xviii) | **"NRI Student"** shall mean the student who is admitted against NRI/PIO/FN category. |
| (xix) | **"OBC"** shall mean the other backward classes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| (xx) | **"PD"** shall mean the persons with disability as specified by the Government of India from time to time; |
| (xxi) | **"Registration"** means registration for course or semester at the start of the semester of any program of the university |
| (xxii) | **"SC/ST"** shall mean the scheduled castes and scheduled tribes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| (xxiii) | **"Scheme of Teaching and Examination"** shall mean the scheme of teaching and examination for a branch of study as approved by the BoM; |
| (xxiv) | **"SGPA"** shall mean the semester grade point average; |
| (xxv) | **"Student"** shall mean a student registered for an undergraduate program for full-time study leading to the B. Tech. degree. |
| (xxvi) | **"UG"** shall mean the Under Graduate; |
| (xxvii) | **"UG Program"** shall mean a program of courses and /or any other component leading to the Bachelor of Technology degree in a specified discipline/branch. |
| (xxviii) | **"University"** shall mean the Delhi Technology University |
| (xix) | **"UTTC"** shall mean University Time Table Committee; |
| | Note : 'He" and 'His' imply 'he/she' and his/her', respectively; |

# REGULATIONS FOR THE UNDERGRADUATE (UG) DEGREE PROGRAMS

| Short Title & Commencement | 1 | (1) | These Regulations shall be called the Regulations 2015 for the four-year Undergraduate Program of the Delhi Technological University. |
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| | | (2) | These Regulations shall come into force with effect from such date as they are notified. |
| Undergraduate Programs | 2 | (1) | The University may offer such undergraduate programs leading to Bachelor of Technology i.e B. Tech degree (s) as may be approved by the AC and the BoM. |
| | | (2) | The list of currently offered UG programs and the broad course structure are given in Table-1. The structure and program may be amended/ modified in accordance with the decision of the AC/ BoM. (*as per Annexure-A*) |
| | | (3) | The duration of UG programs leading to degrees of B.Tech is normally four years. However, the maximum duration for the UG program for the degree of B.Tech is seven years from the date of initial registration The maximum duration of the program include the period of withdrawal, absence and different kinds of leaves permissible toa student, but it shall exclude the period of rustication. The duration for the UG program may be altered in accordance with the decision of the AC/ BoM. |
| Board of Studies (BoS) | 3 | | The Board of Studies (BoS) shall be a sub-committee of the AC, which shall consider all the academic matters related with the Department. It shall also consider and recommend to the AC the broad framework and policies related to the UG programs offered by the University. The composition of BoS of the department shall consist of the following members, namely: - Head of the Department (Chairman), All professors of the department (Members), Two experts appointed by Vice Chancellor (Members) and Two Associate Professors of the department by rotation (Members) for a period of two years. |
| Phasing out of a Program | 4 | | The phasing out of any UG program may be considered by the AC on the recommendation of the BoS. Also, a program may be phased out by the AC if, consecutively for three years, the number of students registering for the program is less than 40% of the sanctioned intake of the students. |
| Starting a New Program | 5 | (1) | The BoM may approve the starting of a new program or a modified program in lieu of the old phased-out program on the recommendation of the BoS and the AC. |
| | | (2) | A new program may be considered and recommended by the AC to the BoM for its consideration and approval. Such a proposal will be initiated by a Departmental through its BoS. |
| Semester System | 6 | (1) | The academic programs in the University shall be based on semester system; Odd and even semesters in a year with winter and summer vacations. A number of courses shall be offered in each semester. |

| | | (2) | Each course shall have a certain number of credits assigned to it depending upon the academic load of the course assessed on the basis of weekly contact hours of lecture tutorial and laboratory classes, assignments or field study and/or self study. |
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| | | (3) | The courses offered in a semester shall be continually assessed and evaluated to judge the performance of a student. |
| **Admissions** | 7 | (1) | Admission to all Under Graduate Programs shall be made through the JEE (Main). The policy of admissions, the eligibility thereof and other issues pertaining to JEE shall be such as may be approved by AC/BoM |
| | | (2) | NRI/PIO/Foreign national either residing in India o abroad may be admitted to any UG program in accordance with the policy guidelines laid down by the AC/BoM. |
| **Allotment of Branch Program and its change** | 8 | (1) | The allotment of branch to a student shall be made at the time of counseling on the basis of merit in *JEE(Mains)* and according to the preference of the student and the availability of seats. |
| | | (2) | Final up-gradation of branches at the end of First year will be done on the basis of choices filled at the time of counseling. |
| **Academic registration** | 9 | (1) | Every student shall be required to register in each semester on the scheduled date as per academic calendar of the university till the completion of the degree. If the student does not register on scheduled date he/she has to pay late registration fee notified from time to time upto a maximum of 10 working days. Registration in absentia may be permitted by the Dean Academics (UG). In absenti registration may be allowed only in rare cases such as illness or any other contingencies, at the discretion of the Dean, Academics (UG). |
| | | (2) | In case, a student is proceeding on industrial training/internship, late registration may be allowed only up to a maximum of 10 working days after the scheduled registration date without late registration fee by the Dean Academics (UG). |
| **Chairman, UTTC** | 10 | (1) | All the Time Table related work of First year courses shall be looked after by the Chairman, University Time Table Committee. |
| | | (2) | The Chairman University Time Table Committee shall assign the time slots for the I Year courses and will allo' lecture halls/tutorial rooms for I year students. The Chairman, UTTC shall be required to seek the details o. subject teachers from the concerned academic departments and prepare the I year time table accordingly. The time table will also be displayed on the student's notice board/DTU website for the information of students. This task shall be completed at least one week before the commencement of semester. |
| **Subject Registration** | 11 | (1) | Every student shall be required to register for the courses |

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| | | | that he/she wants to study for earning credits and his/her name will appear in the roll list of each of these courses. No credit shall be given if a student attended a course of which he or she has not registered. The performance of a student in all the courses, for which he/she has registered, shall be included in his/her grade card (s). |
| | | (2) | Student should first register for the courses in which he/she has been declared failed in the previous year/semester and then register for the remaining courses of the semester to make up the total required credits for that semester. However, a student shall not be allowed to register for the courses offered to students of third year, if he/she has not cleared all the courses of first year and a student shall not be allowed to register for the courses offered to students of fourth year, if he/she has not cleared all the courses of second year. |
| | | (3) | Those students who are joining the first year of the UG program shall complete the registration procedure on a specified registration date as per academic calendar/schedule notified from time to time. |
| | | (4) | A student may normally register for a minimum of 16 credits and a maximum of 32 credits. In case the student is not allowed to register the courses of current semester due to backlog of course(s) of previous year(s), he/she may register for credits less than 16 depending on number of backlog of course(s) of previous year(s). |
| | | (5) | A student shall have the option to add or delete courses from his/her registration during the first ten days of the semester as per Academic Calendar. |
| **Program Advisor** | 12 | | A program Advisor shall be appointed by the Head of the Department for each program who will advise the students for registration. |
| **Course Coordinator** | 13 | | Every course/subject offered by a Department shall be coordinated by a Course Coordinator appointed by the Head of the Department. The Course Coordinator shall have full responsibility for the course. He/she shall coordinate the work of other faculty members involved in that course in respect of their participation in various activities related to the course including continuous evaluation of the students through tests, quizzes, assignments, mid-term and end term examination and the award of the grades. |
| **Minimum Number Students requirements for an elective Course** | 14 | | An elective course in a Department shall run only if a minimum of 20 numbers of students register for it in a semester. However, the minimum number of student may be 15 in case the strength of the batch of student in the particular department depletes below 40. Similarly a University Elective shall run only for a minimum number of 60 students. |
| **Course Code** | 15 | | Each course offered by the University shall be identified by a course code, normally consisting of a string of five- |

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| | | | alpha-numeric characters followed by a course title. The first two characters in a course code shall be capital letters identifying the responsible Academic Department offering the course. The next three characters are numerical digits: the first one normally specified the year of study and the last two digits specify the course number and the semester in which the course shall be offered. Normally odd number in the course code will indicate that the course will be offered in the odd semester and the even number will indicate that the course will be offered in the even semester of the year. For all the UG programs normally, 100 series shall be for the courses in first year 200 for the courses in the second year and so on. |
| Course Credits | 16 | | Each course shall have an integer number of Credits, which reflects its weight. The number of credits of a course in a semester shall ordinarily be calculated as under: |
| | | (1) | **Lectures/Tutorial:** One lecture hour per week shall normally be assigned one credit. One hour of tutorial per week shall be assigned one credit. However, the credits may be adjusted further by taking into consideration the quantum of work required to be put in by a student for learning the course having two/three hours of contact every alternate week shall have one credit only. |
| | | (2) | **Practicals:** One laboratory hour per week shall normally be assigned half a credit. Not more than three credits may be assigned to a practical course having only laboratory component. The courses having two/three hours of contact every alternate week shall have one credit only. |
| Course Evaluation | 17 | (1) | A student shall be evaluated for his/her academic performance in a course through tutorials, practical's, home work assignments, term papers, field work/industrial training, seminars, quizzes as class work Sessionals (CWS) and Practical Sessional (PRS) Mid Term Examination (MTE), End Term Examination (ETE) and Practical Examination (PRE) as applicable according to the guidelines formulated by the AC. |
| | | (2) | The distribution of weights for each component shall be announced by the course Coordinator at the beginning of the course, subject to such stipulations as are given in the Scheme of Teaching and Examination for a given program. |
| | | (3) | The criteria for continuous evaluation of any subject be declared in the very first week of commencement of the classes. |
| | | (4) | Answer sheets of the test (s) and examination (s) cannot be written in Pencil. |
| | | (5) | Evaluation of Answer sheets (s) should not be in pencil. |
| | | (6) | A student can go through his/her answer sheets (s) of MTE and the ETE and point out any discrepancy in its evaluation on a day fixed by the Course Coordinator, Chairman, Grade Moderation Committee. Objections will be entertained right then, and not even on the next day. |

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| | | (7) | Head of Departments will ensure that end term examination answer sheets are shown to the students before the day of moderation, on a date to be specified and prominently displayed by the respective teachers. Further, the answer sheets be preserved by the concerned teacher for six months, before handing over to departmental stock for disposal. |
| | | (8) | The answer sheets of the end term examination shall not be shown to a student after finalization of the grades by the Grade Moderation Committee. |
| | | (9) | The industrial/field training shall normally be evaluated through the quality of work carried out, the report submission and presentation(s) but the project shall be evaluated normally by Mid Term seminar(s), quality of work carried out, project report submitted and the viva-voce examination. |
| Conduction of Examination | 18 | (1) | Each course coordinator (s) shall prepare and type his/her question paper, set for Mid-term and End-term examination. In case the course is taught by many faculty members papers shall be set in consultation with all the faculty members teaching the course to avoid confusion arising due to coverage of course by each faculty member. The question paper may be got photocopied in his/her presence to maintain confidentiality and should be kept under his/her custody till it is delivered to superintendent of examination in sealed envelope 45 minutes prior to conduct of the particular End term examination. |
| | | (2) | Mid-term examination will be conducted by course coordinator and the faculty members concern during the slot notified by the Controller of Examination. |
| | | (3) | While the paper is set, the Mid Term examination papers will not have any alternative, however 20-30% alternatives may be admissible in the End semester examination paper. |
| | | (4) | The End term examination will be conducted through Superintendent of examination, appointed by Vice Chancellor, DTU from time to time. |
| | | (5) | The evaluation of Mid and End term answer sheets of 1$^{st}$ year students may be carried out either by checking one question by one group of examiners and similarly other questions checked by other groups extending the procedure to whole lot of answer sheets. [Centralized checking] <br> OR <br> The examiner for one batch shall be other than the instructor of that batch ($A_n/B_n$). The examiner of one batch ($A_n/B_n$) will check the answer sheets of other batch and this process is rotated for all batches. [Batch based checking]. <br> The same be decided by the coordinating examiner on recommendations by BoS of the concerned department. |
| | | (6) | The evaluation of answer sheets for Mid and End Term examination of 2$^{nd}$-4$^{th}$yr B.Tech students shall be done in a |

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| | | | de-centralized manner by the concerned examiners. |
| | | (7) | Evaluation process should be concluded within specified days from the end of the schedule of examination: Mid Term Examination – One week End Term Examination-Two weeks |
| | | (8) | A notification of slot/date/venue be issued by concerned faculty member under intimation to Controller of Examination for showing answer sheets to the student (both Mid Term & End term) should be shown to the students by the concerned faculty members. Policy adopted by individual faculty member for evaluation of answer sheets should be uniform and consistent, and in case any moderation is done for the marks the same should uniformly be applied under intimation to Controller of Examination. |
| **Grading System** | 19 | (1) | The academic performance of a student shall be graded on a 10-point scale as per the guidelines given in *Annexure-B*. The letter grades and their equivalent grade points are listed in Table-5. |
| | | (2) | The letter Grades awarded to a student in all the courses shall be converted into a semester and cumulative performance index called the semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA), to be calculated by the procedures given in Annexure-B of these Regulations. |
| | | (3) | At the end of the program, a student with CGPA of 8.5 and above shall be awarded 'First Division with Distinction' and a student with CGPA between 6.75 and 8.5 shall be awarded "First Division". |
| | | (4) | All the passing out students of a class shall be given ranks as **"Rank XXX in a class of YYY Students".** |
| **Grade Moderation Committee** | 20 | (1) | The BoS of academic department (s) will constitute the Grade Moderation Committee for all the Academic Courses under its purview. The Head of the department shall be the chairman of the committee, and other members shall consists of 2- Professors of the department, 2 Associate professors of the department and 2 Assistant professors of the department. This committee shall the responsible for adherence to the guidelines for the award of grades and shall include all the concerned Course Coordinators. The Chairman, Grade Moderation Committee shall be responsible for the display of grades in the department and for forwarding the final grades to the Examination Section. The Chairman, Grade Moderation Committees shall also retain the record-copies of the marks and the grades along with the statistical parameters for all the courses moderated. The general guidelines for the moderation of grades are given in Annexure-C. One copy of distribution of marks and the question paper will be sent to the examination section along with grades by the Department. |

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| | | (2) | The Grade Moderation Committee for the common courses offered to first year shall consist of all the course Coordinators of the courses offered to the first year students in a semester with the Dean Academics (UG) as the Chairman. The chairman, Grade Moderation Committee shall be responsible for the display of grades and for forwarding the final grades to the Examination Section. The Chairman Grade Moderation Committee shall also retain the record copy of marks and grades along with the statistical parameters for all the courses moderated by the committee. |
| Scrutiny of Grades, Tabulation and declaration of Results | 21 | (1) | A student may apply for scrutiny of grades to the Chairman BoS, within three days from the scheduled date of display of grades. A committee consisting of the Dean Academics (UG), the concerned Chairman of the Grade Moderation Committee and the course Coordinator may check the entry of the weights from different components of evaluation and their addition. The results of scrutiny may lead to either a change in grade due to mistake(s) in any of the aspects scrutinized by the committee or the grade may remain unchanged. The results will be intimated to the Examination Section within three days from the date of receiving the application in the department as per academic calendar. For the first year common course, the Chairman of the Grade Moderation Committee and the Course Coordinator shall constitute the Scrutiny Committee. |
| | | (2) | In exceptional circumstances the grade(s) of a student or a number of students may be scrutinized by a committee constituted by the VC. |
| | | (3) | The controller of examination shall organize the tabulation of grades and declaration of results. CoE shall be the custodian of records related to examination and results. |
| Unfair Means | 22 | | In case a student is found adopting or suspected of adopting unfair means before, during or after the examination, or lifting or copying of work (s) of someone else and inserting it in his class work submissions, Project, Dissertation etc. without proper acknowledgement, credit and reference, such penal action shall be taken by the University against the student as may be necessary and adequate to uphold the sanctity and integrity of the examination system and the credibility of the University. The general instruction for penal action for use of unfair means are given in Annexure D. |
| | | (1) | All the cases regarding use of unfair means practices in the examinations shall be reported and placed before the 'Unfair Means Scrutiny Committee". The Controller of Examinations shall convene the Unfair Means Scrutiny Committee from time to time as per the requirements. |
| | | (2) | The Unfair Means Scrutiny Committee shall be constituted as under:<br>1. Dean Academic (UG)- Chairman<br>2. Dean Academic (PG)-Member |

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| | | | 3. Dean of Students Welfare-Member<br>4. Head of the concerned Department-Member<br>5. Controller of Examinations-Member<br>6. AR Academic-(UG)-Member<br>7. Asstt. Controller of Examination-Convener |
| | | (3) | For Project, Class Work Submission, Mid Term Examination etc., the Course coordination committee ma report the matter to the BoS. The BoS may after considering the matter reported to it and after giving a.. opportunity to the concerned student(s) to explain his/he conduct impose appropriate penalty, including the award of grade in the concerned course (s) on the concerne students(s). |
| **Attendance, Absence, Leave and Withdrawals** | 23 | (1) | All the students of UG program are expected to atten every lecture, tutorial, practical or drawing class schedule·' for them. |
| | | (2) | The students of UG must have a minimum attendance c 75% of the total number of classes including lecture· tutorials and practicals, held in a subject in order to be eligible to appear at the end term examination for th. subject. |
| | | (3) | The Dean Academic (UG), authorized by the Vic Chancellor for this purpose may relax the minimu attendance upto 10% for reasons to be recorded. This relaxation may be granted on production of documen. showing that the student was either busy in the authorize activities or suffering from any disease. The student shoula submit these documents to the course coordinator ar · chairman BoS within seven days of resuming the studies. |
| | | (4) | Under exceptional circumstances, the Vice Chancellor ma, further relax the minimum attendance upto 5%. |
| | | (5) | Attendance of the students shall be monitored and displayed during a semester as per the guidelines approv. by the AC/BoM. The guidelines for monitoring th· attendance of the students are given in Annexure-E. |
| | | (6) | The names of the students whose attendance is less th. 75% {subject to the relaxation mentioned in 23 (3) and /or 23 (4)} in the classes held in a course will be intimated b,' the Course Coordinator on the last teaching day, to th· Chairman, BoS, who will consolidate the list for all such students for all the courses of a given yearly level of program and display it on the notice board of the Department. The list of such students shall also b. forwarded to the COE. These students shall not be allowe· to appear in the end term examination of that course and shall be awarded the grade 'F' irrespective of the performance in Class Work Sessional (CWS)/ Mid Term Examination (MTE), etc. |
| **Make-up Examination on Medical/Extra Ordinary Ground** | 24 | (1) | Students who have missed the mid-term examination fr valid reasons (Annexure F) may become eligible for a make-up examination subject to the permission given b, the Dean Academic (UG) on the clear c.·t |

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| | | | recommendations of Chairman BoS considering the merit of the case. It may be given to the deserving students. The student should make an application to the Dean, Academic UG, through Chairman BoS, within ten working days from the date of the examination missed, explaining the reasons for their absence. Applications received after this period will not be entertained. Further, there will be no makeup of the makeup examination. |
| | | (2) | If a student is absent during end Term examination of a course due to medical reasons or other special circumstance (Annexure F), he /she may apply for the award of 'I' grade to the Chairman BoS of the concerned department offering the course, through the Course Coordinator, make-up-examination will be allowed only if a student has not been disqualified earlier, due to shortage of attendance. The Chairman BoS may forward this request to Dean Academic (UG) and COE. Make-up examination shall be normally held along with the supplementary examination of End Term Examination to convert 'I' grade to proper letter grade. |
| Supplementary Examination | 25 | (1) | Supplementary examination in any course (s) shall be permissible only in the semester (s) in which the course (s) is/are run, supplementary examination will be held during vacations or latest by one month of the commencement of the next semester, which will be announced by Dean Academic (UG). |
| | | (2) | A student will carry the marks obtained by him/her in the Mid Term Examination, Practical examination and Sessional. |
| | | (3) | The highest grade that can be awarded in the Supplementary examination shall be 'D'. |
| | | (4) | Supplementary-examination will be allowed only if a student has not been disqualified earlier, either due to shortage of attendance or use of unfair means. |
| Withdrawal from Course | 26a | | A student who wants to withdraw from a course shall apply through the Chairman BoS to the Dean Academic (UG), on a prescribed form within one week from the end of the Mid Term examination under the advice of his/her program Advisor. If his/her request for withdrawal is granted, it will be recorded in the registration record of the student and the concerned Course Coordinator will be informed about it. The student will be awarded a withdrawal grade at the end of the semester. |
| Semester Withdrawal | 26b | | In case a student is unable to attend classes for more than four weeks in a semester he/she may apply to the Dean Academics through Chairman BoS, for withdrawal from the semester, which shall mean withdrawal from all the registered courses in the semester. However, such application shall be made under the advice of the program advisor, as early as possible and latest before the start of the end term examination. Partial withdrawal from the |

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| | | | semester shall not be allowed. |
| **Semester Withdrawal on Medical Grounds** | 26c | (i) | In case the period of absence on medical grounds is more than twenty working days during the semester, a student may apply for withdrawal from the semester, if he /she so desires. But as per provisions of section 26b application must be made to the Dean Academics (UG) through chairman BoS under the advice of the program advisor, as early as possible and latest before the beginning of end term examination. |
| | | (ii) | Any application on medical grounds shall be accompanied with a medical certificate from University doctor/Medical Officer. A certificate from a registered medical practitioner containing the registration number may also be accepted those cases where a study is normally residing off-campus or becomes ill while away from the University. |
| **Rustication/Suspension/ Withdrawal from a Semester/year** | 26d | | A student rusticated from the University of suspended or debarred the classes due to any reason whatsoever or having withdrawn from a semester / year on medical grounds, shall have to meet the requirement of 75% attendance in each course in a semester and shall have to complete the program within its maximum time limit of seven years for Four Year UG program as specified in Regulationss excluding the period of expulsion, if any. |
| **Termination of enrolment** | 27 | **Due to Absence** | |
| | | | If a student registered in the first year of the program is continuously absent from the classes for more than fo weeks without informing the Course Coordinators, the Coordinator shall immediately bring it to the notice of Chairman, BoS, of the concerned Department f informing the Dean Academic (UG). The names of such students shall be removed from the University rolls a such absence during first year will render the student ineligible for re-admission. |
| | | **On Academic Grounds** | |
| | | (a) | The student who has earned not more than 10 credits at the end of first semester shall be given a warning for his/her poor performance by Dean Academic (UG). The enrolment of a student in a program shall stand terminated if he/she fails to earn 18 credits at the end of first year. Tl communication regarding termination of enrolment shall be issued by the Dean Academic (UG) within fifteen days from the date of declaration of results". |
| | | (b) | The duration of the B. Tech. program is 4 years i.e. 8 semesters. The enrolment of a student will stand cancelle at the end of 7 years from the date of initial registration in the first semester. |
| | | (c) | A student whose enrolment has been terminated ma appeal to the VC for reconsideration within fifteen days from the date of issuance of the communication termination and the appeal will be disposed off within fifteen days. If the appeal is allowed, his/her registration |

| | | | and enrolment shall be restored. |
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| **Earned Minimum Credits and Minimum CGPA for the Degree** | 28 | (1) | The credits for the courses in which a student has obtained 'D' (minimum passing grade for a course) grade or higher shall be counted as Credit earned by him/her. A student who has a minimum CGPA of 5.0 and earned the required number of credits as specified in the UG curriculum he/she is registered for, is eligible for the award of the respective degree. |
| | | (2) | A student who has earned the minimum credits required for a degree but fails to obtain the minimum specified CGPA for this purpose, shall be allowed to register in course (s) till the minimum CGPA is attained within the maximum time limit for different programs. |
| **Scholarship, Prizes, Medals and Merit Certificate** | 29 | (1) | The University shall award the merit-cum-means (MCM) scholarships, University free studentship, SC/ST category University scholarship and other scholarships, award and prizes to the student of UG programs as may be approved by the AC. Other scholarships may be awarded by the University from the grant from individuals, trusts organizations and the Governments with a view to provide financial assistance to needy students under the terms and conditions specified by the University. Announcements on these scholarships stating eligibility and the value of scholarships etc. shall be made by the University while inviting applications from time to time. |
| | | (2) | Those students, who have been punished for unfair means during Mid Term examination (MTE) or End Term Examination (ETE) or in Seminars/ project/ etc. or for serious act of indiscipline shall not be awarded Merit-cum-Means Scholarship and other trust scholarship or Medals, Prizes and awards for that academic session only. |
| | | (3) | Student may draw scholarships from outside sources only if permitted by Dean Academic (UG). |
| **Interpretation of Regulations** | 30 | | In case of any dispute, difference of opinion in interpretation of these Regulations or any other matter not covered in these Regulations, the decision of the Chairman, AC shall be final and binding. |
| **Emergent Cases** | 31 | | Not with standing anything contained in the above Regulations, the Chairman of the AC may, in emergent situation, take such action including insertion, suspension or modification of any Regulation(s) on behalf of the AC as he deems appropriate and report it to the next meeting of the AC for its approval. |

## Course Structure for B.Tech Program
### First Year

| S.No. | Subject | Credits | Category |
|---|---|---|---|
| | **Odd Semester** | | |
| 1. | Mathematics-I | 4 | ASC |
| 2. | Physics-I | 4 | ASC |
| 3. | Chemistry/Basic Electrical Engineering | 4 | ASC/AEC |
| 4. | Basic Mechanical Engineering/ Programming and Data Structure | 4 | AEC |
| 5. | Workshop Practice/Engineering Graphics | 2 | AEC |
| 6 | Communication Skills/Environmental sciences | 3 | HMC/AEC |
| | Total | 21 | |
| | **Even Semester** | | |
| S.No. | Subject | Credits | Category |
| 1. | Mathematics-II | 4 | ASC |
| 2. | Physics-II | 4 | ASC |
| 3. | Basic Electrical Engineering/Chemistry | 4 | AEC/ASC |
| 4. | Programming and Data Structure/Basic mechanical Engineering | 4 | AEC |
| 5. | Engineering Graphics /Workshop Practice | 2 | AEC |
| 6 | Environmental sciences /Communication Skills | 3 | AEC/HMC |
| | Total | 21 | |

### Second Year

| S.No. | Subject | Credits | Category |
|---|---|---|---|
| | **Odd Semester** | | |
| 1. | Allied Engineering Course-1 | 4 | AEC |
| 2. | Department Core Course-1 | 4 | DCC |
| 3. | Department Core Course-2 | 4 | DCC |
| 4. | Department Core Course-3 | 4 | DCC |
| 5. | Engineering Analysis and Design | 4 | DCC |
| 6. | Humanities /Management Course | 3 | HMC |
| | Total | 23 | |
| | **Even Semester** | | |
| S.No. | Subject | Credits | Category |
| 1. | Allied Engineering Course-2 | 4 | AEC |
| 2. | Department Core Course-4 | 4 | DCC |
| 3. | Department Core Course-5 | 4 | DCC |
| 4. | Department Core Course-6 | 4 | DCC |
| 5. | Department Core Course-7 | 4 | DCC |
| 6 | Humanities /Management course | 3 | HMC |
| | Total | 23 | |

## Third Year*

| | Odd Semester | | |
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| **S.No.** | **Subject** | **Credits** | **Category** |
| 1. | Department Core Course-8 | 4 | DCC |
| 2. | Department Core Course-9 | 4 | DCC |
| 3. | Departmental Elective Course-1 | 4 | DCC/DEC |
| 4. | Department Elective Course-2 | 4 | DCC/DEC |
| 5. | University Elective Course | 3 | UEC |
| 6 | Professional Ethics and Human Values/ Technical Communications | 2 | HMC |
| | Total | 21 | |
| | **Even Semester** | | |
| **S.No.** | **Subject** | **Credits** | **Category** |
| 1. | Department Core Course-10 | 4 | DCC |
| 2. | Department Core Course-11 | 4 | DCC |
| 3. | Department Core Course-12 | 4 | DCC |
| 4. | Department Elective Course-3 | 4 | DEC |
| 5. | Department Elective Course-4 | 4 | DEC |
| 6. | Technical Communications /Professional Ethics and Human Values | 2 | HMC |
| | Total | 22 | |

\* Individual departments may swap DCC courses in V/VI semester with DEC courses and vice-versa subject to the condition that the total credits at the end of Third year remain the same.

## Fourth Year**

| | Odd Semester | | |
|---|---|---|---|
| **S.No.** | **Subject** | **Credits** | **Category** |
| 1. | B. Tech project | 4 | DCC |
| 2. | Training Seminar | 2 | DCC |
| 3. | Department Core Course-13 | 4 | DCC |
| 4. | Department Core Course-14 | 4 | DCC |
| 5. | Department Elective Course-5 | 4 | DEC |
| 6. | Department Elective Course-6 | 4 | DEC |
| | Total | 22 | |
| | **Even Semester** | | |
| **S.No.** | **Subject** | **Credits** | |
| 1. | B. Tech Project (Contd. From VII semester) | 8 | DCC |
| 2. | Department Core Course-15 | 4 | DCC |
| 3. | Department Elective Course-7 | 4 | DEC |
| 4. | Department Elective Course-8 | 4 | DEC |
| | Total | 20 | |

\*\* Individual departments may swap DCC courses in VII/VIII semester with DEC courses and vice-versa (excluding the Project) subject to the condition that the total credits at the end of Fourth year remain the same.

## Table-5 STRUCTURE FOR GRADING OF ACADEMIC PERFORMANCE

| Academic Performance | Grades | Grade Points |
|---|---|---|
| Outstanding | $A^+$ | 10 |
| Excellent | A | 9 |
| Very Good | $B^+$ | 8 |
| Good | B | 7 |
| Average | $C^+$ | 6 |
| Below Average | C | 5 |
| Marginal | D | 4 |
| Poor | F | 0 |
| Incomplete | I | -- |

**Explanation:**

**'F' Grade**

The 'F' grades denote poor performance, i.e. failing course. 'F' grade is also awarded in case of poor attendance (see attendance Rules)

For the other (elective) course in which 'F' grade has been awarded, the student may take the same course or any other course from the same category. Further, 'F' grade secured in any course stays permanently on the grade card. The weight of 'F' grade is not counted in the calculation of the CGPA however, it is counted in the calculation of the SGPA.

In case a student is awarded a failing grade in the major project, he/she shall have to repeat the course in the form of a new project. Such a student will have to work full time on the project for a minimum period of four months and maximum 'B' grade can be awarded to the student.

**'I' grade**

This refers to an 'incomplete' grade which is required to be converted into a regular letter grade as provided in section 24(2) of Regulations for the B. Tech programs. The guidelines for the award of 'I' grade are given in Annexure-B 3.

**Calculation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)**

$$\text{S.G.P.A.} = \frac{\sum_{i=1}^{n} C_i \times P_i}{\sum_{i=1}^{n} C_i}$$

Where,

$C_i$ = Number of Credits of the $i^{th}$ course of a semester for which SGPA is to be calculated

$P_i$ = Grade Point obtained in $i^{th}$ course

$i = 1, \ldots\ldots\ldots n$, represent the number of course in which a student is registered in the concerned semester.

$$\text{C.G.P.A.} = \frac{\sum_{i=1}^{m} C_i \times P_i}{\sum_{i=1}^{m} C_i}$$

Where,

$C_i$ = Number of Credits of the $i^{th}$ course of a semester.

$P_i$ = Grade Point obtained in $i^{th}$ course. A grade lower than 'D' (i.e. grade point < 4) in a course shall not be taken into account.

$i = 1, \ldots\ldots\ldots n$, represent the number of courses in which a student was registered and obtained a grade not lower than 'D' upto that semester for which CGPA is to be calculated.

## General Guidelines for the Award of Grades

The following are the general guidelines for the award of grades:

(i)     All evaluations of different components of a course shall be done in marks for each student.

(ii)    The marks of various components shall be reduced to approved weights as indicated in the scheme of Teaching and Examination and added to get total marks secured on a 100-Point scale. The rounding off shall be done only once and on the higher side.

(iii)   The method suggested in Annexure-B1 shall be used for the award of grades with or without marginal adjustment for natural cut-offs.

(iv)    In case of any difficulty the method suggested in Annexure-B2 can be used.

(v)     It is suggested that there will not be more than 10% (rounded off to near integer value) A$^+$ grade.

(vi)    The provisional grades shall be awarded by the Coordination Committee of the course consisting     of all the teachers involved in that course. The course coordinator shall have full responsibility for this purpose.

(vii)   The grades so awarded shall be moderated by BoS of a Department.

(viii)  For a student to get passing grade, he/she will have to appear in End Term Examination.

(ix)    The procedures for evaluation and award of grades for major project and industrial training seminar shall be as given in the Annexure B4-B5 of Regulations for the B. Tech programs.

**Statistical Method for the Award of Grades (For Courses in which number of students is more than 30)**

For the award of grades in a course, all component-wise evaluation shall be done in marks. The marks of different components viz. Mid Term Examination (MTE), End Term Examination (ETE), Course Work Sessionals (CWS) and Practical Sessionals (PRS) would be reduced to relative weights of each components as approved by the AC and added. Marks so obtained shall be out of 100 and the same would be converted to grades following the guidelines given below:

The statistical method shall invariably be used , with marginal adjustment for natural cut-off. The mean and the standard deviation of marks obtained of all the students in a course shall be calculated and used to convert the marks into normal variate (Z). The normalized marks (Z) shall be arranged in decreasing order to work out ranges for different letter grades.

$$Z = \frac{X - \bar{X}}{\sigma}$$

Where X = Actual Marks obtained, $\bar{X}$= Mean of marks and $\sigma$ = Standard deviation.

The grade boundaries are left to the discretion of BOS. However, a minimum of 'D' grade will be awarded if the student scores more than 35 marks in aggregate in a course. The set of boundaries for Z variate is mentioned in the Table-6 below:

**Table-6 : Set of Boundaries for Z variate**

| Lower Range of Z | Grade | Upper Range of Z |
|---|---|---|
| >1.5 | $A^+$ | -- |
| >1.0 | A | $\leq 1.5$ |
| >0.5 | $B^+$ | $\leq 1.0$ |
| >0.0 | B | $\leq 0.5$ |
| >-0.5 | $C^+$ | $\leq 0.0$ |
| >-1.0 | C | $\leq -0.5$ |
| >-1.5 | D | $\leq -1.0$ |
| -- | F | $\leq -1.5$ |

**Awards of Grades Based on Absolute Marks System (For Courses in which number of students is less than or equal to 30)**

The award of grades based on absolute marks out of 100 shall be made as given in Table-7 below:

**Table-7: Marks Boundaries for Grades in Absolute Marks System**

| Marks | Grade | Marks |
|-------|-------|-------|
| $91\leq$ | $A^+$ | $\leq 100$ |
| $82 \leq$ | A | $\leq 90$ |
| $73\leq$ | $B^+$ | $\leq 81$ |
| $64 \leq$ | B | $\leq 72$ |
| $55 \leq$ | $C^+$ | $\leq 63$ |
| $46 \leq$ | C | $\leq 54$ |
| $35 \leq$ | D | $\leq 45$ |
| - | F | $\leq 34$ |

## Award of 'I' Grade

a) If a student is absent during End Term Examination of a course due to medical reasons or other special circumstances, he/she may apply for the award of 'I' grade to the Chairman, BoS through the Course Coordinator, provided that he/she has not been disqualified due to shortage of attendance. The concerned course coordinator shall have to be convinced about the extraordinary circumstances and shall have to certify the attendance record before this rarely used option to award 'I' grade is recommended. The Chairman BoS may award 'I' grade.

b) The 'I" grade so awarded shall be notified by the Department to which the student belongs and a copy of the notification will be endorsed to the COE and to the concerned Course Coordinator (e.g. the notification for 'I' grade of a Mechanical Engineering student will be notified by the Department of Mechanical Engineering on the recommendation of the concerned Course Coordinator, even if the course pertains to another Department.

c) The 'I' grade shall be converted into a proper letter grade as per the provisions in Regulations 24(2) after make up examination is over and the requirements of the course are completed by the student and shall be sent to the COE.

d) In extra ordinary circumstances, the period of conversion of 'I' grade may be extended to the next semester, with the approval of the Dean, Academics (UG) on his own or on the recommendation of the Course Coordinator and the Head of the Departments.

e) In extra-ordinary circumstances, on the recommendation of the Dean, Academic (UG), the Vice-Chancellor may order the award of 'I' grade to a student/class or a batch of students taking a particular course. The conversion of 'I' grade into a regular grade or any other action shall be as per the directive of the Vice-Chancellor.

## Evaluation Industrial/Field Training

a) Every student will submit a written report to the Training and Placement Department on the work carried out during the training period along with a certificate from the Organization where training was undertaken. HoD of Training and Placement will forward all these reports to respective departments.

b) A time slot of 2 hour/week/batch will be assigned in the student time table and the students will be asked to present their work in the form of a seminar of about 30-minutes duration, before a committee appointed by the BoS and other students of that batch.

c) The performance of the students will be evaluated by the committee in marks on the basis of (i) the training report, (ii) presentation, (iii) viva-voce.

d) Although normal attendance will not apply to this course component, 10-20% marks will be awarded on the basis of attendance in seminars to encourage participation of the entire class.

e) The grades will be computed on the basis of the established procedure as for other courses.

f) The grade moderation committee for the course will be the same as that for the other courses of the class.

g) If a student is awarded a "F" grade in this course, he/she shall have to repeat the course by undergoing 6-10 week training either at the University or at an organization outside the University during the summer vacation following the eighth semester.

## Procedure for Conduct and Evaluation of B.Tech Project

a)   This course will be offered in the final year of the B.Tech program and its total duration will be two semesters.

b)   Head of the department shall appoint a project coordinator on the advice of BoS from amongst the faculty members of the department who will act as the course coordinator.

c)   The project can be carried out by the student either individually or in a group. However the number of students in a group will generally not exceed four.

(d)   The project coordinator will invite proposals from the faculty members and students and finalize the project problems allotted to various groups by August 31, in the $7^{th}$ semester.

e)   An L-T-P loading of 0-0-4 and 0-0-8 will be shown in the time table of students in the seventh and eighth semesters, respectively and the students would be required to work on their projects during these periods. However, no teacher will be assigned for these periods and the progress of students will be monitored by their respective supervisors.

f)   The evaluation will be based upon mid –term examinations (MTE) and an end term examination   (ETE) with a weightage of 40% and 60% respectively.

g)   Mid Term examination will be held in each of the $7^{th}$ and $8^{th}$ semesters. The mid-term examination will involve report submission, presentation and oral viva-voce. For this purpose, suitable committees will be constituted by the BoS for evaluation of report, presentation and oral   viva-voce. The project examination committees will award marks to individual students and   forward them to the project coordinator who will maintain these record.

h)   The end term project examination will be carried out at the end of $7^{th}$ (for 4 credits) and $8^{th}$ (for 8 credits) semester respectively, within 10 days form the last theory paper. For this purpose, suitable examination   committees will be appointed by the BoS in consultation with the project coordinator, with at least one external examiner. In case an examiner from outside the University is not available, faculty member of the University from outside the Department may be appointed as an external examiner after taking his/her consents.

i)   The students will be required to submit a final project report to the project coordinator, at least 3 days before the date of final project examination.

j)   The final examination may be in the form of demonstration in the laboratory and viva-voce or only viva-voce depending upon the nature of the project.

k)   The examination committee will award marks to individual students and forward them to project coordinator who will compute grades in accordance with the prescribed procedures.

l)   The Grade Moderation Committee for the course will be the same as that for other courses of the class.

m)   In case a student is awarded a failing grade in the major project, he/she shall have to repeat the course in the form of a new project. Such a student will have to work full time on the project for a minimum period of 4 months.

n)   Normal attendance regulations will not apply to this course.

## Guidelines for Moderation of Grades

a) The dateof moderation should be made a part of the Academic Calendar of the University.

b) Two-tier moderation be adopted, both for the subject and for the Semester (SGPA, CGPA), Minor adjustment should be possible during moderation, particularly in the marginal cases. Chairman, BOS should invariable retain a copy of the grades sent to Academic Section so that CGPAs may be calculated without having to make a reference to the Academic Section for this purpose.

c) All concerned faculty members should invariably be present for the moderation committee meeting in case a faculty member anybody is going out on University duty, he/she will hand over his/her inputs for moderation with a colleague, who should present it, in the meeting.

## Instruction for Penalty for Use of Unfair Means

1. The main instruction for the conduct of a student in the examination hall shall be printed on the cover page of the answer sheets. Any contravention of these instructions and the use any unfair means will render the student liable for punishment.

2. As soon as student is suspected by the invigilator having resorted to unfair means, his/her `answer-book shall be seized. The paper etc. duly signed by the invigilator found in possession of the student shall be attached with answer-book in his/her present. The student shall then be asked to complete part II of the prescribed form and sign it. This form shall than be endorsed by the Invigilator.

3. After completing all the above formalities, a fresh answer-book shall be given to the student for completing the examination.

4. After a particular examination is over, these answer-books (duly marked I, II) shall or delivered separately to the COE together with the report form duly completed in all respects.

5. All the cases reported in the category of unfair means shall be forwarded to the unfair means scrutiny committee which will inquire into them and submit its recommendation after laying down clearly the nature of the offence listed below to the Vice-Chancellor for consideration and necessary orders.

6. The action as given in table may be taken for different categories of offense under these Regulations.

## Penalty for use of Unfair Means

| S.No. | Nature of Offence | Action to be Taken |
|---|---|---|
| A | (a) A student found talking to another student during the examination hours. (b) If during the examination hours i.e. after receipt of the question- paper and before handling over the Answer book a student is found to be talking to a person outside the examination hall while going to the urinal etc. (c) Changing seat in the examination- hall without permission. (d) Committing any breach of any direction given to the student. | The first answer-book to be withdrawn and cancelled and the second answer book to be provided and evaluated. |
| B | (a) Attempt to influence the examiner by an appeal in the answer-book. (b) Writing either the questions set in the paper or solutions thereof on paper/electronic device etc. while during the examination. (c) Possession of cell phone or any other item of such type of communication in examination hall. (d) Intentionally tearing off the Answer Book/a part thereof or a continuation sheet. | The examination of the concerned paper to be cancelled. |

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| | | |
|---|---|---|
| | (e) Using abusive or obscene language in the answer book.<br>(f) Misbehaving with the Superintendent/Invigilator/staff on duty or with any other candidate in or around the Examination Centre before, during or after the examination.<br>(g) Leaving the examination room without the permission of the Superintendent of the Examination or without handing over the answer book to the Invigilator /In-charge or without signing the attendance sheet. | |
| C | To be found in possession of any written or cyclostyled notes or any printed materials or notes written on any part of the body/clothing or instruments such as set square, electronic device etc. or having notes written on chair, table, desk or drawing board or cover of the calculator etc which could be helpful to him/her in answering the paper or could be helpful to another candidate in that Examination Hall during the examination. | All the examinations (Theory+Practical, including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examinatio and end term examination for that semester to be cancelled. This implie that registration of the student for tha Semester stands cancelled. |
| D | (a) If during the examination hours i.e. after receipt of the question paper and before handling - over the answer book a student is found:<br>(i) To be copying or to have copied from any paper, book or note written on any part of his/her clothing or body or table or desk or instruments like setsquare, etc.<br>(ii) To be consulting notes or books while being outside the examination hall during examination hours.<br>(iii) Passing on a copy of question(s) set in paper or solution thereof to any one.<br>(iv)To have received help from or given help to another candidate through some written material/ electronic device pertaining to the questions set in the paper concerned.<br>(v) To have allowed any other candidate to copy from his/her answer-book.<br>(vi)Communicating or attempting to communicate directly or through someone else with the examiner or anybody connected with the University examination for influencing them in the award of marks.<br>(b) The candidate on being challenged/searched during the course of examination by the Superintendent, Invigilator or a staff on duty, swallows a note/ paper or runs with it or is guilty of causing disappearance or destroying any such material with the intention of obliterating the evidence of the material possessed by him/her.<br>(c) Gross misbehavior i.e. threatening with | All the examinations (Theory + Practical) including back papers and th marks awarded in quizzes, marks for continued evaluation and mid-ter examination and end term examination for that semester to be cancelled. This implies that registration of the stude for that Semester stands cancelled, and the student to be debarred from registering the courses offered for nex semester except for back papers (for which attendance is not required and th student has acquired marks for continued evaluation and mid semester examination). The University Camp thus remains debarred for such student for next semester, except that he/she i allowed to sit in back paper examination. However, for continuation of registration in the degree program The student has to pay the fees as applicable to a UG/PG student even fo the period of his/her debarment. |

| | | |
|---|---|---|
| | physical force in connection with the examination with the Superintendent, the Invigilator/ staff on duty working at the Examination Centre with any other candidate in or around the examination Centre, before, during or after the Examination.<br>(d) When the candidate disturbs the examination or attempts to do so. | |
| E | (a) Found in possession of a solution of a question set in the paper through the help of any student, supervisory or ministerial staff or some other agency.<br>(b) Found guilty of having made previous arrangement to obtain help in connection with the question paper in cases not covered by the above provision.<br>(c) Smuggling in an answer-book or part of it, taking out or arranging to send out an answer-book or part of it.<br>(d) When the candidate replaces or gets replaced during the course of the examination his / her answer book or any page or continuation sheet with any other unauthorized book, page or continuation sheet.<br>(e) When the candidate replaces or gets replaced an answer book or its any page or continuation sheet after the examination or manages to write or gets written an answer book including the continuation sheet, if an answer to any of the questions which he had not written earlier during the examination. | All the examinations (Theory+Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled, and the student to be debarred from registering the courses offered for the next semester including back papers. The University Campus thus remains debarred for such student for next semester and he/she will only be able to register for courses in the University for next to next semester. However, for continuation of the registration in the program he/she has to pay the fee as applicable to UG/PG student even for the period debarment. |
| F | Found guilty of:<br>(a) Writing deliberately another students' roll no. in his/her answer book or found in possession of an answer-book not his/her own or impersonating another candidates in any examinations.<br>(b) Guilty of serious misconduct in the examination hall or non - compliance with the instructions of the superintendent or any of the invigilators in the examination hall. | All the examinations (Theory+Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled, and the student to be debarred from registering the courses offered for the next semester including back papers. The University Campus thus remains debarred for such student for next two semesters or expulsion from the University depending on the gravity of the offence, and he/she will only be able to register for courses in the University after the expiry of two semesters. However, for continuation of the registration in the program he/she has to pay the fee as applicable to UG/PG student even for |

| | | | the period debarment. |
|---|---|---|---|
| G | Found guilty of:<br>(a) Inciting other students to leave the examination room or disrupt the examination or attempts to do so.<br>(b) Gross misbehavior in connection with the examination with the Invigilator on duty or the other staff working at the examination and is also guilty of assault or inflicting any injury on such person. | | All the examinations (Theory+Practica' including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examinatio· and end term examination for that semester to be cancelled. This implie that registration of the student for that Semester stands cancelled, and the student to be debarred from registerin the courses offered for the next semester including back papers. The Universit, Campus thus remains debarred for such student for next three semesters or expulsion from the Universit depending on the gravity of the offence and he/she will only be able to registe for courses in the University after th expiry of three semesters. However, for continuation of the registration in th program he/she has to pay the fee as applicable to UG/PG student even foi the period debarrement. |
| H | (a) Any person who is not a candidate for any examination found committing or abetting in committal of any of the offences mentioned above. | | To be dealt with by the Vice Chancellc in an appropriate manner. |
| I | CASES NOT COVERED BY THESE REGULATIONS. | | To be decided by the Vice Chancellor. |

Note:
(a) In these Regulations the year means the academic year.
(b) Having once made use of dishonest or unfair means or having once indulged in disorderly condu in the examination, if the candidate again makes use of dishonest or unfair means or indulges in disorderly conduct in the same examination, he/she shall be awarded punishment prescribed in th... sub-clause which is next to the once in which his/her case falls or any higher punishment.
(c) In case of extenuating circumstances, the above punishment may be reduced by the Vice Chancellor depending upon the merits of the case.

# FORM FOR REPORTING CASES OF USE OF OR ATTEMPT TO USE UNFAIR MEANS AT THE UNIVERSITY EXAMIANTION

Note: One sheet should be used for one candidate only, if printed forms run short, the form should be photocopied and used.

Name of examination ...................................................................................................................

Name of Student ...............................................................................Roll No...................................

Complete Postal Address **(Including Phone/Mobile No.)**...................................................................

...................................................................................................................................................

Subject in which the candidate is reported to have used or intended to use unfair means .....................

Day ........................... Date ...........................Time ...................................................

1. Particular of book, papers, electronic gadgets etc found in possession of the student and submitted along with the answer sheet (all these materials should be signed by the Invigilator of examination and the student).

Name of book (if any)          (a) ...................................................................

                               (b) ...................................................................

                               (c) ...................................................................

Number of leaves of books .................................................................................

Number of          (a)     Manuscript slips: ................... Sheets .....................

Any other articles such as electronic gadget etc.

(a) ...................................................................

(b) ...................................................................

(c) ...................................................................

2. Statement of the student to be obtained at once in his/her own handwriting.

Were the above articles recovered from your possession? ..............................

Why did you keep them with you inspite of clear instructions? ........................

Did you make any use of them? ...................................................................

Have you anything else to state? ..............................................................

Date ............ Time ................                                   (Signature of Student)

Certified that this statement was made in my presence.

Certified that the candidate declined to give any statement. (Certificate not applicable should be crossed by the invigilator)

Date ............ Time ................                                   (Signature of Invigilator)

Date ............ Time ................                                   (Signature of Superintendent)

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## GUIDE LINES FOR ATTENDANCE RECORDS AND PREPARATION OF LIST OF STUDENTS NOT ELEIGIBLE TO APPEAR IN THE END TERM EXAMIANTIO.

| Step | Action | Performa to be filled | Target Dates |
|---|---|---|---|
| First | Communication form Chairman, BoS to course coordinator requesting to submit the list of students having short attendance on specified format up to prescribed date | ATT.1/7 | One week before the last date of display a per academic calendar |
| Second | Consolidation of the list of such students by Chairman BOS and Notice form, chairman, BoS for short attendance | ATT.2/7 | |
| Third | Communication from AR(ACAD-UG) to parent/guardian of student having short attendance. | ATT.3/7 | |
| Fourth | Communication from Chairman BoS to course Coordinator requesting to submit the final lit of students having short attendance on specified format up to prescribed date. | ATT.4/7 | |
| Fifth | Preparation on list of detained students by BoS and recommendation to this effect. | ATT.5/7 | |
| Sixth | Notices form Chairman, BoS to Students Notice Board. | ATT.6/7 | |

**From Chairman, BoS to Course Coordinators**

**DEPARTMENT OF** ......................................................

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

Academic Year ..............................................

Class .........................................................

Semester ............................ Odd/Even

Course Title ............................................... Course Code ..............................

**All Course Coordinators**

Please inform the name s of UG students having less that 75% attendance (L+T+P) upto .................
(as per academic calendar) in the course of which you are the coordinator in Odd /Even Semester
................... The information may please be sent to undersigned **latest by** ................... In the
proforma given below along with a photocopy of attendance record of entire class. If there is no short
attendance case in your course, please write NIL in the proforma.

| S.No. | Student enrolment Number | Name of Student | Branch | Attendance Record (L+T+P) | | |
|---|---|---|---|---|---|---|
| | | | | Classes Held | Classes Attended | Percentage Attendance |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Signature**

Name of the Course Coordinator ......................................

**Form Chairman,BoS to Notice Boards**

DEPARTMENT OF ...................................................

NOTICE

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**Academic Year ............ Class ................... Semester ............... Odd /Even**

As per attendance Regulations in force, astudent is required to have attended at least 75% of the total classes held in a subject, in order to be eligible to appear in the end-term examination of that subject. Upto ........................ (as per academic calender0, the following students are having short-attendance in the courses indicated against their names. These students are advised to be extra careful and make up for the short attendance; otherwise they may be debarred from appearing in the end term examination.

| S.No. | Student enrolment No. | Name of Student | Branch | Course | | Percentage Attendance |
|---|---|---|---|---|---|---|
| | | | | Code | Title | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Chairman,BOS**

Copy to:

1.    AR, Academic (UG) to inform Student's parent/guardian
2.    Students Notice Board
3.    Respective program Advisors with the request to call the students and counsel them.

**NOTICE**        **UNDER CERTIFICATE OF POSTING**

**From Assistant Registrar (Academic-UG) to student's parent / guardian**

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**No:**                                             **Dated ...............**

Dear Guardian /Parent

Your ward is studying B.Tech. ( .....................Year ) degree course at this University.

I have to inform you that as per Regulations of the University governing the attendance of the students a student is required to have at least 75% attendance in a course in a semester to be eligible to appear in the End Term Examination of that course. But your ward is not attendingthe classes regularly and his/her attendance has fallen below the required level in following course. (s)

| S.No. | Course | | S.No. | Course | |
|-------|--------|--------|-------|--------|--------|
|       | Code   | title  |       | Code   | Title  |
|       |        |        |       |        |        |
|       |        |        |       |        |        |
|       |        |        |       |        |        |

This is for your kind information. You may also kindly advise your ward to be regular in attending the classes and bring his/her attendance to the required level failing which he/she will not be allowed to appear in the examinations.

Yours truly,

**AR Academic-UG**

**From Chairman,BoSto Notice Boards**

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**DEPARTMENT OF** ..................................................................

**Academic Year** ...........................................

**Semester** ............................. **Odd/Even**

**Course Title** ...................................................................

**Course Code** ................................

**All Course Coordinators**

Please inform the names of UG students having less that 75% attendance (L+T+P) upto ................. (as per academic calendar) in the course of which you are the coordinator in Odd /Even Semester .................. The information may please be sent to undersigned **latest by** ................... In the proforma given below along with a photocopy of attendance record of entire class. If there is no short attendance case in your course, please write NIL in the proforma.

| S.No. | Student Enroll No. | Name of Student | Branch | Attendance Record (L+T+P) | | |
|---|---|---|---|---|---|---|
| | | | | Classes Held | Classes Attended | Percentage Attendance |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Name of the Course Coordinator ...............................        Signature

**From Chairman BOS**

DEPARTMENT OF ...............................................................

LIST OF STUDENTS NOTELIGIBLE TO APPEAR IN END TERM EXAMINATION AS PER REGULATIONS

Academic Year ........................... Class .................

Semester ............................ Odd/Even

Course Title ..................................................................

Course Code ...............................

| S.No. | Enrolment No. | Name of Student | Percentage attendance |
|-------|---------------|-----------------|-----------------------|
|       |               |                 |                       |
|       |               |                 |                       |
|       |               |                 |                       |

1. **(a)** Dates on which the names of the students were palace on the Notice Boards of the Department ........
   **(b)** If the names of the students were note placed on the Notice Boards, specify the reasons for the same.

2. As per the information given by all teachers of this subject, there are no other cases of shortage of attendance in this subject.

3. The students as listed above are detained from appearing in the examination in the subject noted above as per the attendance record given above.

Signature of Chairman BoS

Members of and chairman

Members ..............................

(CHAIRMAN)

**DEPARTMENT OF** ..............................................................

## NOTICE

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**Academic Year** .......................... **Class** ...............

**Semester** ........................... **Odd/Even**

On the recommendation of department /centre academic committee meeting held on ..........
Following students are herby detained from appearing in the end term examination in subjects listed
against their names.

| S.No. | Student enrolment No. | Name of Student | Branch | Course | | Percentage Attendance |
|-------|-----------------------|-----------------|--------|--------|------|-----------------------|
| | | | | Title | Code | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Date:**                                                                    **Chairman ,BOS)**

Copy to:

1. AR, Academic (UG) to inform Student's parent/guardian
2. Students Notice Board
3. Respective program Advisors with the request to call the students and counsel them.

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## LIST OF STUDENTS HAVING SHPORT ATTENDANCE (<75%)

**Academic Year** ...........................

**Class** ................

**Semester** ........................... **Odd/Even**

As per attendance Regulations .......... And recommendation made by competent authority, following students are not found eligible to appear in End Term Examination of Odd/Even semester in the courses mentioned before their name, Invigilators are requested not to allow these students to appear in the concerned examinations.

| S.No. | Student Enrolment No. | Name of Student | Branch | Course | | Percentage Attendance |
|---|---|---|---|---|---|---|
| | | | | Title | Code | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Date :**                                        **Assistant Registrar-UG**

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## Academic Section (UG)
## Delhi Technological University
### FORM OF APPLICATION
for
# Make-up Examination for Mid/End Semester(Odd/Even) Examination 201..-201..

| The form when completed should be submitted to: | *(For use by the Academic Section {UG})* |
|---|---|
| **The Assistant Registrar,** <br> **Academic Section(U.G.),** <br> *Delhi Technological University* | **Permitted** by Dean Acad.(UG) / <br> **NOT Permitted** by Dean Acad.(UG) |

| To be filled in by the applicant | |
|---|---|
| **Name**:........................................ | *Address for Communication:* |
| **Roll No**: ..................................... | |
| Mobile No........................................ | ............................................................ |
| Email: ........................................... | ............................................................ |

A.     Courses requested for Make-up Examination:

| S.No | Course Code | Name of the Course | Credits | Date & time slot of the Exam | Reason for missing the Exam |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |

B.     Supported Mandatory Documents for the claim:(*Please tick the annexed documents below*)

| | |
|---|---|
| | Recommendation of concerned Warden (*if the student resides in University Hostel*) |
| | Medical Certificate issued by the Medical Officer of the Hospital the student was admitted duly endorsed by Medical Officer of University Health Centre |
| | Proof of admission in Hospital and discharge slip etc |
| | Proof of medical tests conducted |
| | Fitness certificate of the hospital |
| | Endorsement by parent/guardian on the certificate of treatment(*if the student is a Day Scholar*) |
| | Medical certificate from hospital where Parents/real brother or sister/spouse was admitted in ICU duly endorsed by Medical Officer of University Health Centre |
| | Prior Approval of Dean Acad(UG) for any authorized work in the academic interests |

**DECLARATION**

I hereby solemnly declare that the foregoing facts are true and correct and nothing is false therein and nothing mat has been concealed there from. I also agree that in case any information given by me herein before is found false at date, the result for the requested courses for make-up examination be cancelled.

| | |
|---|---|
| Signature of the Parents/Guardian | Signature of Student |
| Name (in Capital Letters) | Name (in Capital Letters) |
| Date : | Date : |
| Place : | Place : |

# DELHI TECHNOLOGICAL UNIVERSITY

## Ordinance (5A)
*(for batches 2015-16 and onwards)*

### Preamble

There are following 12 Academic Departments in the University. The University offers 15 B.Tech program of four years duration, 4 B.Tech(Evening) programs of four years duration, 22 M.Tech programs of two years durations, 1 Master of Business Management program of two year duration, 1 Master of Business Management(Executive) and PhD programs for various Engineering, Science and Management disciplines.

### Academic Departments

| S. No. | Name of Department | Code | S. No. | Name of Department | Code |
|--------|--------------------|------|--------|--------------------|------|
| 1 | Applied Physics | AP | 7 | Electrical Engineering | EE |
| 2 | Applied Chemistry | AC | 8 | Electronics and Communication Engineering | EC |
| 3 | Applied Mathematics | MA | 9 | Environmental Engineering | EN |
| 4 | Biotechnology | BT | 10 | Humanities and Social Science | HU |
| 5 | Civil Engineering | CE | 11 | Mechanical Engineering | ME |
| 6 | Computer Science & Engineering | CO | 12 | Delhi School of Management | MG |

The Academic Departments offer courses to the students of various disciplines. Academic curricula are so devised that a student of one discipline can take some courses of other disciplines offering choice based credit system. Such flexibility helps a student to develop his core competence together with the interdisciplinary skills in the area of his/her interest.

### Programs

The main aim of education at DTU is to enable students to face the wide-ranging changes taking place in the fields of technology, environment and management with confidence. This includes undertaking design, development, construction, production, managerial and entrepreneurial activities, and higher studies in their chosen or allied interdisciplinary fields of study.

The University lays great emphasis on assisting students in the development of character on self-confidence with management traits. To achieve these goals the curriculum lays more stress on learning and less on teaching. Efforts are made to encourage self-learning, creative thinking, critical evaluation, spirit of inquiry and imbibing the culture of lifelong learning.

The University offers following under graduate programs (Table-1) leading to Bachelor of Technology (Evening) degree in different disciplines.

## Table-1 UG (Evening) Programs

| S.No. | Academic Program | Code | Duration (in Years) | Department |
|---|---|---|---|---|
| 1. | B.Tech. (Evening) (Civil Engineering) | CE | 4 | Civil Engineering |
| 2. | B.Tech. (Evening) (Electrical Engineering) | EE | 4 | Electrical Engineering |
| 3. | B.Tech. (Evening) (Electronics & Communication Engineering) | EC | 4 | Electronics & Communication Engineering |
| 4. | B.Tech. (Evening) (Mechanical Engineering) | ME | 4 | Mechanical Engineering |

## Structure of Undergraduate programs

The four year B.Tech (Evening) programs compromise of courses divided in six distinct areas, namely: Departmental Core (DCC), Departmental Elective (DEC), Allied Engineering (AEC), Applied Sciences and Mathematics (ASC), Humanities, Social Sciences and Management(HMC) and University Electives(UEC).

Credits assigned to various components of the B. Tech (Evening) curriculum are given in Table-2.

## University Elective Courses

The University Electives are the courses offered by different academic Departments to the students of other disciplines. These courses are offered in either V/VI semester. A student must opt for a University elective course which is offered by any academic department other than his own. The University elective courses are shown in Table-3.

## Departmental Core Courses (DCC)

The departmental core consists of (15-16) courses considered essential for a chosen engineering/science discipline including, engineering design, seminar and project.

## Departmental Elective Courses (DEC)

The students are required to complete a number of Departmental Elective courses (7-8) offered by his/her parent department. Every Department offers a wide variety of elective courses under this category.

## Humanities, Social Sciences and Management Courses (HMC)

The Humanities, Social Sciences and Management Courses package consist of a 4 courses considered essential for a B.Tech (Evening) program to inculcate the essence of technical writing, communication skills, economics and analysis, management and professional ethics & human values.

## Allied Engineering Courses (AEC)

The students are required to complete at least two Allied engineering courses offered by engineering departments other than his/her parent department. These courses expose the student with wide spectrum knowledge of allied engineering domain connected to the main engineering stream of the course of study of the students of concerned departments.

## Table 2 Credits of different curricular components

| CURRICULAR COMPONENTS | | Credits |
|---|---|---|
| **(a) Departmental Core Courses (DCC)** | | |
| i. | Core Courses | 60-64 |
| ii. | Engineering Analysis and Design | 04 |
| iii. | B.Tech (Evening) Project | 12 |
| | Total | **76-80** |
| **(b) Humanities, Social Sciences and Management Courses (HMC)** | | |
| i. | Humanities and Social Sciences | 05 |
| ii. | Management Studies | 03 |
| iii. | Professional Ethics and Human Values | 02 |
| | Total | **10** |
| **(c) Allied Engineering Courses (AEC)** | | **08** |
| **(d) University Elective Course (UEC)** | | **03** |
| **(e) Departmental Elective Courses (DEC)** | | **29-25** |
| | Grand Total | **126** |

## Table-3 University Elective Courses

| S.No. | SUBJECT CODE | SUBJECTS |
|---|---|---|
| | CEC-351 | Mechatronics |
| | CEC-353 | Computer Vision |
| | CEC-355 | Embedded System |
| | CEC-357 | Digital Image Processing |
| | CEC-359 | VLSI Design |
| | CME-351 | Power Plant Engineering |
| | CME-353 | Renewable Sources of Energy |
| | CME-355 | Combustion Generated Pollution |
| | CME-357 | Thermal System |
| | CME-359 | Refrigeration & Air Conditioning |
| | CME-361 | Industrial Engineering |
| | CME-363 | Product Design & Simulation |
| | CME-365 | Computational fluid dynamics |
| | CME-367 | Finite Element Methods |
| | CME-369 | Total Life Cycle Management |
| | CME-371 | Value Engineering |
| | CPE –351 | Supply Chain Management |
| | CPE-353 | Total Quality Management |
| | CEE-351 | Power Electronics Systems |
| | CEE-353 | Electrical Machines and Power Systems |
| | CEE-355 | Instrumentation Systems |
| | CEE-357 | Utilization of Electrical Energy |
| | CEE-359 | Non-conventional Energy Systems |
| | CEE-361 | Embedded Systems |
| | CEN-351 | Environmental Pollution & E- Waste Management |
| | CEN-353 | Occupational Health & Safety Management |
| | CHU-351 | Econometrics |

## Course Coding

A course is identified by a course code designated by a string of alpha-numeric characters and a course title. In a course code, first letter 'C' imply continuing education the next two letters of the string indicate the Academic Department/Program code offering the course and the last three numbers designate particular course number.

## Course Number

For all the courses, the first digit corresponds to the level (year) at which a course is normally offered. The last two digits denote the number of the course, which will usually be odd for courses offered in the Odd Semester and even for courses in the Even Semester. For example, the course, "Network Analysis and Synthesis, offered to Electrical Engineering students in second year Odd Semester' is numbered as CEE101.

## Abbreviations and Notations

## Credits: Cr

## Teaching Engagements

Every course maintains a teaching schedule for which weekly contact hours are decided for delivering lectures (L), engaging tutorials (T) and/or performing practicals(P) to make learning in a course more effective. In the syllabi, the information regarding number of course credits and contact hours per week is denoted as: **Credits (L – T – P) ;     4 (3 – 1 -0)**

## Weights for Course Evaluation

Evaluation in every course is based on the weights assigned to various components of the course curriculum. These components are designated as under :

| | |
|---|---|
| CWS | Class Work Sessional |
| MTE | Mid Term Examination |
| PRE | Practical Examination |
| PRS | Practical Sessional |
| ETE | End Term Examination |

In general, the relative weights assigned to different components of the entire course are as given in the table below:

| S.NO. | Course Type | | | Examination | | Relative Weights | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | P | TH | PR | CWS | PRS | MTE | ETE | PRE |
| 1. | 2 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 2. | 3 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | - |
| 3. | 4 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 4. | 3 | 1 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 5. | 3 | 0 | 2 | Yes | No | 15 | 25 | 20 | 40 | - |
| 6. | 3 | 0 | 2 | Yes | No | 15 | 15 | 30 | 40 | -- |
| 7. | 2 | 1 | 2 | Yes | No | 15 | 25 | 20 | 40 | - |
| 8. | 2 | 1 | 2 | Yes | No | 15 | 15 | 30 | 40 | - |
| 9. | 0 | 0 | 3 | -- | Yes | -- | 25 | 25 | -- | 50 |
| 10. | 0 | 0 | 6 | -- | Yes | -- | 50 | -- | -- | 5 |

Some examples are given below **'CHU-101 Communication Skills'** refers to a course offered by the Department of Humanities to the students of first year of the B.Tech (Evening) programs and is

offered in the Odd semester, similarly **'CCE-102 Engineering Mechanics'** refers to a course offered by the Department of Civil Engineering to the students of first year of the B.Tech (Evening) programs and is offered in the even semester

| S.No. | Teaching Scheme | | | | Contact Hours/Week | | | Exam Duration (HR) | | Relative Weights | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Subject Code | Course Title | Subject Area | Credits | L | T | P | TH | P | CWS | PRS | MTE | ETE | PRE |
| 1. | CHU-101 | Communication Skills | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | -- |
| 2. | CCE102 | Engineering Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | -- |

### Credit System

The University follows a modern methods of continuous evaluation, which is prevalent in most of the professional institutions nationally and internationally, through a credit system in all its, programs. The system offers flexibility to progress at a pace commensurate with the capabilities of a student to minimum credit requirements. The award system follows letter grades on a 10-point scale, where the performance is measured in terms of weighted grade point averages (SGPA and CGPA). A student has to satisfy minimum CGPA and earned credit requirements to be eligible for the award of degree (Table-2).

## ORDINANCE FOR THE B.TECH(EVENING) PROGRAMS

| Short Title & Commencement | 1 | (i) | This Ordinance shall be called the Ordinance 5A meant for the four-year Undergraduate B.Tech(Evening) Program of the Delhi Technological University for batches 2015-16 onwards. |
|---|---|---|---|
| | | (ii) | This Ordinance shall come into force with effect from such date as they are notified. |
| Definitions (Unless the Context requires otherwise) | 2 | (i) | "Applicant" shall mean an individual who applies for admission to any undergraduate (UG) B.Tech(Evening) program of the University; |
| | | (ii) | "Academic Centre" means centre established in the university for running the academic and research activities |
| | | (iii) | "AC" and "Council" shall mean the Academic Council of the Delhi Technological University; |
| | | (iv) | "Academic Program" includes a program of courses or any other component leading to a Bachelors (Evening) degree. |
| | | (v) | "BoM" shall mean the Board of Management of the University. |
| | | (vi) | "BoS" means Board of Studies of the concerned Department |
| | | (vii) | "CGPA" shall mean the Cumulative grade point average; |
| | | (viii) | "Coordination Committee" shall mean the committee of the faculty members involved in a course; |
| | | (ix) | "COE" means Controller of Examination of the University |
| | | (x) | "Course" shall mean a curriculum component of the academic program identified by a designated code number, a title and specific credit assigned to it. |
| | | (xi) | "Course Coordinator" shall mean a faculty member who shall have full responsibility for the course; coordinating the work of faculty member(s) involved in that course, including examinations and the award of grades; |

| | | | |
|---|---|---|---|
| | | (xii) | "DA-UG" shall mean the Dean, Academics (UG); |
| | | (xiii) | "Degree" shall mean the Bachelor of Technology (Evening) degree viz. B.Tech (Evening) degree of the University as may be approved by the BoM from time to time. |
| | | (xiv) | "DOSW" shall mean the Dean of Students Welfare. |
| | | (xv) | "Faculty Advisor" shall mean a teacher nominated by the Department to advise a student on the courses to be taken by him and other matters related to the academic program; |
| | | (xvi) | "Grade Moderation Committee" shall mean the committee appointed by the BoS to moderate grades awarded by the Course Coordinators in different courses in a semester at a given level of a curriculum; |
| | | (xvii) | "B.TECH (EVENING) ENTRANCE EXAMINATION" shall mean the Entrance Examination for admission to undergraduate {B.Tech. (Evening)} program of the Delhi Technological University. |
| | | (xviii) | "GEN" shall mean the student who is admitted against General category. |
| | | (xix) | "OBC" shall mean the other backward classes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| | | (xx) | "PD" shall mean the persons with disability as specified by the Government of India from time to time; |
| | | (xxi) | "Registration" means registration for course or semester at the start of the semester of any program of the university |
| | | (xxii) | "SC/ST" shall mean the scheduled castes and scheduled tribes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| | | (xxiii) | "Scheme of Teaching and Examination" shall mean the scheme of teaching and examination for a branch of study as approved by the BoM; |
| | | (xxiv) | "SGPA" shall mean the semester grade point average; |
| | | (xxv) | "Student" shall mean a student registered for an undergraduate program for full-time study leading to the B. Tech. (Evening) degree. |
| | | (xxvi) | "UG" shall mean the Under Graduate; |
| | | (xxvii) | "UG Program" shall mean a program of courses and /or any other component leading to the Bachelor of Technology (Evening) degree in a specified discipline/branch. |
| | | (xxviii) | "University" shall mean the Delhi Technology University |
| | | | Note : 'He" and 'His' imply 'he/she' and his/her', respectively; |
| Ordinance | (3) | (1) | The University shall offer such UG B. Tech. (Evening) Program and of such minimum duration as the BoM may approve on the recommendation of the AC either on its own or on the initiative of a Department/Academic Centre, and/or on the direction of the BoM. |
| | | (2) | The procedure for staring a new B. Tech. (Evening) program, temporarily suspending a B. Tech. (Evening) program or phasing out a program shall be such, as may be laid down in the Regulations |
| | | (3) | The minimum entry qualifications and the policy and |

| | | | |
|---|---|---|---|
| | | | procedure of admission to B. Tech. (Evening) program shall be such as may be approved by the AC and BoM |
| | | (4) | A B. Tech. (Evening) student shall be required to earn a minimum number of credits through various curricular components like teaching /laboratory courses, seminar, project etc. at the University or at such other institutions as have been approved by the University. |
| | | (5) | A B. Tech. (Evening) student shall be required to complete all the requirements for the award of the Bachelors (Evening) Degree within such period as may be specified in the Regulations. |
| | | (6) | The date of initial registration for the B. Tech. (Evening) program shall normally be the date on which the student formally registers for the first time. This date shall be construed as the date of joining the program for all intents and purposes. |
| | | (7) | A B. Tech. (Evening) student shall be required normally to attend every lecture, tutorial and laboratory class. However, for late registration, sickness or other such exigencies, absence may be allowed as provided for in the Regulations. |
| | | (8) | A B. Tech. (Evening) student may be awarded prizes and medals as may be specified in the Regulations in accordance with the directions of the Government of India and/or the decision of the AC/ BoM. |
| | | (9) | The procedure for the withdrawal from a B. Tech. (Evening) program rejoining the program, the award of grades and the SGPA/CGPA the examination and all such matters as may be connected with the running of a program shall be such as may be specified in the Regulations. |
| | | (10) | The award of the B.Tech (Evening) degree to an eligible candidate shall be made in accordance with the procedure laid down in the Regulations. |
| | | (11) | Notwithstanding anything contained in the above Ordinances, no Regulations shall be made in contravention of the decision of the BoM/ AC in regard to the duration of the program and the number of studentships and the procedure of admission and the percentage of students of various categories, viz. reserved (SC/ST. OBC, PD) and unreserved categories. The Regulations for the B. Tech. (Evening) program shall be approved by the AC and the BoM. |
| | | (12) | In special circumstances, the Chairman of the BoM may, on behalf of the BoM, approve amendment, modification, insertion or deletion of an Ordinance(s), which in his opinion is necessary or expedient for the smooth running of a program: Provided that all such changes shall be reported to the BoM in its next meeting for approval. |

# DELHI TECHNOLOGICAL UNIVERSITY

## Regulation for Ordinance (5A)
*(for batches 2015-16 and onwards)*

### Preamble

There are following 12 Academic Departments in the University. The University offers 15 B.Tech program of four years duration, 4 B.Tech(Evening) programs of four years duration, 22 M.Tech programs of two years durations, 1 Master of Business Management program of two year duration, 1 Master of Business Management(Executive) and PhD programs for various Engineering, Science and Management disciplines.

### Academic Departments

| S. No. | Name of Department | Code | S. No. | Name of Department | Code |
|--------|--------------------|------|--------|--------------------|------|
| 1 | Applied Physics | AP | 7 | Electrical Engineering | EE |
| 2 | Applied Chemistry | AC | 8 | Electronics and Communication Engineering | EC |
| 3 | Applied Mathematics | MA | 9 | Environmental Engineering | EN |
| 4 | Biotechnology | BT | 10 | Humanities and Social Science | HU |
| 5 | Civil Engineering | CE | 11 | Mechanical Engineering | ME |
| 6 | Computer Science & Engineering | CO | 12 | Delhi School of Management | MG |

The Academic Departments offer courses to the students of various disciplines. Academic curricula are so devised that a student of one discipline can take some courses of other disciplines offering choice based credit system. Such flexibility helps a student to develop his core competence together with the interdisciplinary skills in the area of his/her interest.

### Programs

The main aim of education at DTU is to enable students to face the wide-ranging changes taking place in the fields of technology, environment and management with confidence. This includes undertaking design, development, construction, production, managerial and entrepreneurial activities, and higher studies in their chosen or allied interdisciplinary fields of study.

The University lays great emphasis on assisting students in the development of character on self-confidence with management traits. To achieve these goals the curriculum lays more stress on learning and less on teaching. Efforts are made to encourage self-learning, creative thinking, critical evaluation, spirit of inquiry and imbibing the culture of lifelong learning.

The University offers following under graduate programs (Table-1) leading to Bachelor of Technology (Evening) degree in different disciplines.

## Table-1 UG (Evening) Programs

| S.No. | Academic Program | Code | Duration (in Years) | Department |
|-------|------------------|------|---------------------|------------|
| 1. | B.Tech. (Evening) (Civil Engineering) | CE | 4 | Civil Engineering |
| 2. | B.Tech. (Evening) (Electrical Engineering) | EE | 4 | Electrical Engineering |
| 3. | B.Tech. (Evening) (Electronics & Communication Engineering) | EC | 4 | Electronics & Communication Engineering |
| 4. | B.Tech. (Evening) (Mechanical Engineering) | ME | 4 | Mechanical Engineering |

## Structure of Undergraduate programs

The four year B.Tech (Evening) programs compromise of courses divided in six distinct areas, namely: Departmental Core (DCC), Departmental Elective (DEC), Allied Engineering (AEC), Applied Sciences and Mathematics (ASC), Humanities, Social Sciences and Management(HMC) and University Electives(UEC).

Credits assigned to various components of the B. Tech (Evening) curriculum are given in Table-2.

## University Elective Courses

The University Electives are the courses offered by different academic Departments to the students of other disciplines. These courses are offered in either V/VI semester. A student must opt for a University elective course which is offered by any academic department other than his own. The University elective courses are shown in Table-3.

## Departmental Core Courses (DCC)

The departmental core consists of (15-16) courses considered essential for a chosen engineering/science discipline including, engineering design, seminar and project.

## Departmental Elective Courses (DEC)

The students are required to complete a number of Departmental Elective courses (7-8) offered by his/her parent department. Every Department offers a wide variety of elective courses under this category.

## Humanities, Social Sciences and Management Courses (HMC)

The Humanities, Social Sciences and Management Courses package consist of a 4 courses considered essential for a B.Tech (Evening) program to inculcate the essence of technical writing, communication skills, economics and analysis, management and professional ethics & human values.

## Allied Engineering Courses (AEC)

The students are required to complete at least two Allied engineering courses offered by engineering departments other than his/her parent department. These courses expose the student with wide spectrum knowledge of allied engineering domain connected to the main engineering stream of the course of study of the students of concerned departments.

## Table 2 Credits of different curricular components

| CURRICULAR COMPONENTS | | Credits |
|---|---|---|
| **(a) Departmental Core Courses (DCC)** | | |
| i. | Core Courses | 60-64 |
| ii. | Engineering Analysis and Design | 04 |
| iii. | B.Tech (Evening) Project | 12 |
| | Total | **76-80** |
| **(b) Humanities, Social Sciences and Management Courses (HMC)** | | |
| i. | Humanities and Social Sciences | 05 |
| ii. | Management Studies | 03 |
| iii. | Professional Ethics and Human Values | 02 |
| | Total | **10** |
| **(c) Allied Engineering Courses (AEC)** | | 08 |
| **(d) University Elective Course (UEC)** | | 03 |
| **(e) Departmental Elective Courses (DEC)** | | 29-25 |
| | Grand Total | 126 |

## Table-3 University Elective Courses

| S.No. | SUBJECT CODE | SUBJECTS |
|---|---|---|
| | CEC-351 | Mechatronics |
| | CEC-353 | Computer Vision |
| | CEC-355 | Embedded System |
| | CEC-357 | Digital Image Processing |
| | CEC-359 | VLSI Design |
| | CME-351 | Power Plant Engineering |
| | CME-353 | Renewable Sources of Energy |
| | CME-355 | Combustion Generated Pollution |
| | CME-357 | Thermal System |
| | CME-359 | Refrigeration & Air Conditioning |
| | CME-361 | Industrial Engineering |
| | CME-363 | Product Design & Simulation |
| | CME-365 | Computational fluid dynamics |
| | CME-367 | Finite Element Methods |
| | CME-369 | Total Life Cycle Management |
| | CME-371 | Value Engineering |
| | CPE –351 | Supply Chain Management |
| | CPE-353 | Total Quality Management |
| | CEE-351 | Power Electronics Systems |
| | CEE-353 | Electrical Machines and Power Systems |
| | CEE-355 | Instrumentation Systems |
| | CEE-357 | Utilization of Electrical Energy |
| | CEE-359 | Non-conventional Energy Systems |
| | CEE-361 | Embedded Systems |
| | CEN-351 | Environmental Pollution & E- Waste Management |
| | CEN-353 | Occupational Health & Safety Management |
| | CHU-351 | Econometrics |

## Course Coding

A course is identified by a course code designated by a string of alpha-numeric characters and a course title. In a course code, first letter 'C' imply continuing education the next two letters of the string indicate the Academic Department/Program code offering the course and the last three numbers designate particular course number.

## Course Number

For all the courses, the first digit corresponds to the level (year) at which a course is normally offered. The last two digits denote the number of the course, which will usually be odd for courses offered in the Odd Semester and even for courses in the Even Semester. For example, the course, "Network Analysis and Synthesis, offered to Electrical Engineering students in second year Odd Semester' is numbered as CEE101.

## Abbreviations and Notations

## Credits: Cr

## Teaching Engagements

Every course maintains a teaching schedule for which weekly contact hours are decided for delivering lectures (L), engaging tutorials (T) and/or performing practicals(P) to make learning in a course more effective. In the syllabi, the information regarding number of course credits and contact hours per week is denoted as: **Credits (L – T – P) ;     4 (3 – 1 -0)**

## Weights for Course Evaluation

Evaluation in every course is based on the weights assigned to various components of the course curriculum. These components are designated as under :

| CWS | Class Work Sessional |
|-----|----------------------|
| MTE | Mid Term Examination |
| PRE | Practical Examination |
| PRS | Practical Sessional |
| ETE | End Term Examination |

In general, the relative weights assigned to different components of the entire course are as given in the table below:

| S.NO. | Course Type | | | Examination | | Relative Weights | | | | |
|-------|---|---|---|---|---|---|---|---|---|---|
| | L | T | P | TH | PR | CWS | PRS | MTE | ETE | PRF |
| 1. | 2 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 2. | 3 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 3. | 4 | 0 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 4. | 3 | 1 | 0 | Yes | -- | 25 | -- | 25 | 50 | -- |
| 5. | 3 | 0 | 2 | Yes | No | 15 | 25 | 20 | 40 | -- |
| 6. | 3 | 0 | 2 | Yes | No | 15 | 15 | 30 | 40 | -- |
| 7. | 2 | 1 | 2 | Yes | No | 15 | 25 | 20 | 40 | -- |
| 8. | 2 | 1 | 2 | Yes | No | 15 | 15 | 30 | 40 | -- |
| 9. | 0 | 0 | 3 | -- | Yes | -- | 25 | 25 | -- | 50 |
| 10. | 0 | 0 | 6 | -- | Yes | -- | 50 | -- | -- | 50 |

Some examples are given below 'CHU-101 Communication Skills' refers to a course offered by the Department of Humanities to the students of first year of the B.Tech (Evening) programs and is

offered in the Odd semester, similarly **'CCE-102 Engineering Mechanics'** refers to a course offered by the Department of Civil Engineering to the students of first year of the B.Tech (Evening) programs and is offered in the even semester

| S.No. | Teaching Scheme | | | | Contact Hours/Week | | | Exam Duration (HR) | | Relative Weights | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Subject Code | Course Title | Subject Area | Credits | L | T | P | TH | P | CWS | PRS | MTE | ETE | PRE |
| 1. | CHU-101 | Communication Skills | HMC | 2 | 2 | 0 | 0 | 3 | 0 | 25 | 0 | 25 | 50 | -- |
| 2. | CCE102 | Engineering Mechanics | DCC | 4 | 3 | 0 | 2 | 3 | 0 | 15 | 25 | 20 | 40 | -- |

## Credit System

The University follows a modern methods of continuous evaluation, which is prevalent in most of the professional institutions nationally and internationally, through a credit system in all its, programs. The system offers flexibility to progress at a pace commensurate with the capabilities of a student to minimum credit requirements. The award system follows letter grades on a 10-point scale, where the performance is measured in terms of weighted grade point averages (SGPA and CGPA). A student has to satisfy minimum CGPA and earned credit requirements to be eligible for the award of degree (Table-2).

| | **Definitions** <br> *(Unless the Context requires otherwise)* |
|---|---|
| (i) | **"Applicant"** shall mean an individual who applies for admission to any undergraduate (UG) B.Tech(Evening) program of the University; |
| (ii) | **"Academic Centre"** means centre established in the university for running the academic and research activities |
| (iii) | **"AC"** and **"Council"** shall mean the Academic Council of the Delhi Technological University; |
| (iv) | **"Academic Program"** includes a program of courses or any other component leading to a Bachelors (Evening) degree. |
| (v) | **"BoM"** shall mean the Board of Management of the University. |
| (vi) | **"BoS"** means Board of Studies of the concerned Department |
| (vii) | **"CGPA"** shall mean the Cumulative grade point average; |
| (viii) | **"Coordination Committee"** shall mean the committee of the faculty members involved in a course; |
| (ix) | **"COE"** means Controller of Examination of the University |
| (x) | **"Course"** shall mean a curriculum component of the academic program identified by a designated code number, a title and specific credit assigned to it. |
| (xi) | **"Course Coordinator"** shall mean a faculty member who shall have full responsibility for the course; coordinating the work of faculty member(s) involved in that course, including examinations and the award of grades; |
| (xii) | **"DA-UG"** shall mean the Dean, Academics (UG); |
| (xiii) | **"Degree"** shall mean the Bachelor of Technology (Evening) degree viz. B.Tech (Evening) degree of the University as may be approved by the BoM from time to time. |
| (xiv) | **"DOSW"** shall mean the Dean of Students Welfare. |
| (xv) | **"Faculty Advisor"** shall mean a teacher nominated by the Department to advise a student on the courses to be taken by him and other matters related to the academic program; |
| (xvi) | **"Grade Moderation Committee"** shall mean the committee appointed by the BoS to |

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| | moderate grades awarded by the Course Coordinators in different courses in a semester at a given level of a curriculum; |
| (xvii) | **"B.TECH (EVENING) ENTRANCE EXAMINATION"** shall mean the Entrance Examination for admission to undergraduate {B.Tech. (Evening)} program of the Delhi Technological University. |
| (xviii) | **"GEN"** shall mean the student who is admitted against General category. |
| (xix) | **"OBC"** shall mean the other backward classes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| (xx) | **"PD"** shall mean the persons with disability as specified by the Government of India from time to time; |
| (xxi) | **"Registration"** means registration for course or semester at the start of the semester of any program of the university |
| (xxii) | **"SC/ST"** shall mean the scheduled castes and scheduled tribes as notified by the Government of India/Govt. of NCT of Delhi from time to time; |
| (xxiii) | **"Scheme of Teaching and Examination"** shall mean the scheme of teaching and examination for a branch of study as approved by the BoM; |
| (xxiv) | **"SGPA"** shall mean the semester grade point average; |
| (xxv) | **"Student"** shall mean a student registered for an undergraduate program for full-time study leading to the B. Tech. (Evening) degree. |
| (xxvi) | **"UG"** shall mean the Under Graduate; |
| (xxvii) | **"UG Program"** shall mean a program of courses and /or any other component leading to the Bachelor of Technology (Evening) degree in a specified discipline/branch. |
| (xxviii) | **"University"** shall mean the Delhi Technology University |
| | Note : 'He" and 'His' imply 'he/she' and his/her', respectively; |

# REGULATIONS FOR THE UNDERGRADUATE B.TECH (EVENING) DEGREE PROGRAMS

| Short Title & Commencement | 1 | (1) | These Regulations shall be called the Regulations 2015 for the four-year Undergraduate B. Tech. (Evening) Program of the Delhi Technological University. |
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| | | (2) | These Regulations shall come into force with effect from such date as they are notified. |
| Undergraduate Programs | 2 | (1) | The University may offer such undergraduate programs leading to Bachelor of Technology i.e B. Tech (Evening) degree (s) as may be approved by the AC and the BoM. |
| | | (2) | The list of currently offered B. Tech. (Evening) programs and the broad course structure are given in Table-1. The structure and program may be amended/ modified in accordance with the decision of the AC/ BoM. (*as per Annexure-A*) |
| | | (3) | The duration of UG programs leading to degrees of B.Tech (Evening) is normally four years. However, the maximum duration for the UG program for the degree of B.Tech (Evening) is seven years from the date of initial registration The maximum duration of the program include the period of withdrawal, absence and different kinds of leaves permissible to a student, but it shall exclude the period of rustication. The duration for the UG program may be altered in accordance with the decision of the AC/ BoM. |
| Board of Studies (BoS) | 3 | | The Board of Studies (BoS) shall be a sub-committee of the AC, which shall consider all the academic matters related with the Department. It shall also consider and recommend to the AC the broad framework and policies related to the UG programs offered by the University. The composition of BoS of the department shall consist of the following members, namely: - Head of the Department (Chairman), All professors of the department (Members), Two experts appointed by Vice Chancellor (Members) and Two Associate Professors of the department by rotation (Members) for a period of two years. |
| Phasing out of a Program | 4 | | The phasing out of any B. Tech. (Evening) program may be considered by the AC on the recommendation of the BoS. Also, a program may be phased out by the AC if, consecutively for three years, the number of students registering for the program is less than 40% of the sanctioned intake of the students. |
| Starting a New Program | 5 | (1) | The BoM may approve the starting of a new program or a modified program in lieu of the old phased-out program on the recommendation of the BoS and the AC. |
| | | (2) | A new program may be considered and recommended by the AC to the BoM for its consideration and approval. Such a proposal will be initiated by a Departmental through its BoS. |
| Semester System | 6 | (1) | The academic programs in the University shall be based on semester system; Odd and even semesters in a year with winter and summer vacations. A number of courses shall |

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| | | | be offered in each semester. |
| | | (2) | Each course shall have a certain number of credits assigned to it depending upon the academic load of the course assessed on the basis of weekly contact hours of lecture, tutorial and laboratory classes, assignments or field study and/or self study. |
| | | (3) | The courses offered in a semester shall be continually assessed and evaluated to judge the performance of a student. |
| **Admissions** | 7 | (1) | Admission to all Under Graduate B.tech (Evening) Programs shall be made through the B.Tech(Evening) Entrance Examination. The policy of admissions, the eligibility thereof and other issues pertaining to the said entrance shall be such as may be approved by AC/BoM |
| **Allotment of Branch Program** | 8 | (1) | The allotment of branch to a student shall be made strictly according to the eligibility, as per the ranking in the B.Tech (Evening) entrance examination of the student and the availability of seats. |
| **Academic registration** | 9 | (1) | Every student shall be required to register in each semester on the scheduled date as per academic calendar of the university till the completion of the degree. If the student does not register on scheduled date he/she has to pay late registration fee notified from time to time upto a maximum of 10 working days. Registration in absentia may be permitted by the Dean Academics (UG). In absentia registration may be allowed only in rare cases such as illness or any other contingencies, at the discretion of the Dean, Academics (UG). |
| **Subject Registration** | 10 | (1) | Every student shall be required to register for the courses that he/she wants to study for earning credits and his/her name will appear in the roll list of each of these courses. No credit shall be given if a student attended a course of which he or she has not registered. The performance of a student in all the courses, for which he/she has registered, shall be included in his/her grade card (s). |
| | | (2) | Student should first register for the courses in which he/she has been declared failed in the previous year/semester and then register for the remaining courses of the semester to make up the total required credits for that semester. However, a student shall not be allowed to register for the courses offered to students of third year, if he/she has not cleared all the courses of first year and a student shall not be allowed to register for the courses offered to students of fourth year, if he/she has not cleared all the courses of second year. |
| | | (3) | Those students who are joining the first year of the B. Tech. (Evening) program shall complete the registration procedure on a specified registration date as per academic calendar/schedule notified from time to time. |
| | | (4) | A student may normally register for a minimum of 16 credits and a maximum of 32 credits. In case the student is |

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| | | | not allowed to register the courses of current semester due to backlog of course(s) of previous year(s), he/she may register for credits less than 16 depending on number of backlog of course(s) of previous year(s). |
| | | (5) | A student shall have the option to add or delete courses from his/her registration during the first ten days of the semester as per Academic Calendar. |
| **Program Advisor** | 11 | | A program Advisor shall be appointed by the Head of the Department for each program who will advise the students for registration. |
| **Course Coordinator** | 12 | | Every course/subject offered by a Department shall be coordinated by a Course Coordinator appointed by the Head of the Department. The Course Coordinator shall have full responsibility for the course. He/she shall coordinate the work of other faculty members involved in that course in respect of their participation in various activities related to the course **including continuous** evaluation of the students through tests, quizzes, assignments, mid-term and end term examination and the award of the grades. |
| **Minimum Number Students requirements for an elective Course** | 13 | | An elective course in a Department shall run only if a minimum of 20 numbers of students register for it in a semester. However, the minimum number of student may be 15 in case the strength of the batch of student in the particular department depletes below 40. Similarly a University Elective shall run only for a minimum number of 40 students. |
| **Course Code** | 14 | | Each course offered by the University shall be identified by a course code, normally consisting of a string of six-alpha-numeric characters followed by a course title. The first character 'C' imply continuing education and the next two characters in a course code in capital letters identifying the responsible Academic Department offering the course. The next three characters are numerical digits: the first one normally specified the year of study and the last two digits specify the course number and the semester in which the course shall be offered. Normally odd number in the course code will indicate that the course will be offered in the odd semester and the even number will indicate that the course will be offered in the even semester of the year. For B. Tech. (Evening) programs normally, 100 series shall be for the courses in first year 200 for the courses in the second year and so on. |
| **Course Credits** | 15 | | Each course shall have an integer number of Credits, which reflects its weight. The number of credits of a course in a semester shall ordinarily be calculated as under: |
| | | (1) | **Lectures/Tutorial:** One lecture hour per week shall normally be assigned one credit. One **hour of** tutorial per week shall be assigned one credit. However, the credits may be adjusted further by taking into consideration the quantum of work required to be put in by a student for |

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| | | | learning the course having two/three hours of contact every alternate week shall have one credit only. |
| | | (2) | **Practicals:** One laboratory hour per week shall normally be assigned half a credit. Not more than three credits may be assigned to a practical course having only laboratory component. The courses having two/three hours of contact every alternate week shall have one credit only. |
| **Course Evaluation** | 16 | (1) | A student shall be evaluated for his/her academic performance in a course through tutorials, practical's, home work assignments, term papers, field work, seminars, quizzes as class work Sessionals (CWS) and Practical Sessional (PRS) Mid Term Examination (MTE), End Term Examination (ETE) and Practical Examination (PRE) as applicable according to the guidelines formulated by the AC. |
| | | (2) | The distribution of weights for each component shall be announced by the course Coordinator at the beginning of the course, subject to such stipulations as are given in the Scheme of Teaching and Examination for a given program. |
| | | (3) | The criteria for continuous evaluation of any subject be declared in the very first week of commencement of the classes. |
| | | (4) | Answer sheets of the test (s) and examination (s) cannot be written in Pencil. |
| | | (5) | Evaluation of Answer sheets (s) should not be in pencil. |
| | | (6) | A student can go through his/her answer sheets (s) of MTE and the ETE and point out any discrepancy in its evaluation on a day fixed by the Course Coordinator/ Chairman, Grade Moderation Committee. Objections will be entertained right then, and not even on the next day. |
| | | (7) | Head of Departments will ensure that end term examination answer sheets are shown to the students before the day of moderation, on a date to be specified and prominently displayed by the respective teachers. Further, the answer sheets be preserved by the concerned teacher for six months, before handing over to departmental stock for disposal. |
| | | (8) | The answer sheets of the end term examination shall not be shown to a student after finalization of the grades by the Grade Moderation Committee. |
| | | (9) | The project shall be evaluated normally by Mid Term seminar(s), quality of work carried out, project report submitted and the viva-voce examination. |
| **Conduction of Examination** | 17 | (1) | Each course coordinator (s) shall prepare and type his/her question paper, set · for Mid-term and End-term examination. In case the course is taught by many faculty members papers shall be set in consultation with all the faculty members teaching the course to avoid confusion arising due to coverage of course by each faculty member. The question paper may be got photocopied in his/her presence to maintain confidentiality and should be kept |

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| | | | under his/her custody till it is delivered to superintendent of examination in sealed envelope 45 minutes prior to conduct of the particular End term examination. |
| | | (2) | Mid-term examination will be conducted by course coordinator and the faculty members concern during the slot notified by the Controller of Examination. |
| | | (3) | While the paper is set, the Mid Term examination papers will not have any alternative, however 20-30% alternatives may be admissible in the End semester examination paper. |
| | | (4) | The End term examination will be conducted through Superintendent of examination, appointed by Vice Chancellor, DTU from time to time. |
| | | (5) | The evaluation of answer sheets for Mid and End Term examination of B.Tech (Evening) students shall be done in a de-centralized manner by the concerned examiners. |
| | | (6) | Evaluation process should be concluded within specified days from the end of the schedule of examination: Mid Term Examination – One week End Term Examination-Two weeks |
| | | (7) | A notification of slot/date/venue be issued by concerned faculty member under intimation to Controller of Examination for showing answer sheets to the students (both Mid Term & End term) should be shown to the students by the concerned faculty members. Policy adopted by individual faculty member for evaluation of answer sheets should be uniform and consistent, and in case any moderation is done for the marks the same should uniformly be applied under intimation to Controller of Examination. |
| **Grading System** | 18 | (1) | The academic performance of a student shall be graded on a 10-point scale as per the guidelines given in *Annexure-B*. The letter grades and their equivalent grade points are listed in Table-4. |
| | | (2) | The letter Grades awarded to a student in all the courses shall be converted into a semester and cumulative performance index called the semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA), to be calculated by the procedures given in Annexure-B of these Regulations. |
| | | (3) | At the end of the program, a student with CGPA of 8.5 and above shall be awarded 'First Division with Distinction' and a student with CGPA between 6.75 and 8.5 shall be awarded "First Division". |
| | | (4) | All the passing out students of a class shall be given ranks as **"Rank XXX in a class of YYY Students"**. |
| **Grade Moderation Committee** | 19 | | The BoS of academic department (s) will constitute the Grade Moderation Committee for all the Academic Courses under its purview. The Head of the department shall be the chairman of the committee, and other members shall consists of 2- Professors of the department, 2 Associate professors of the department and 2 Assistant |

| | | | professors of the department. This committee shall the responsible for adherence to the guidelines for the award of grades and shall include all the concerned Course Coordinators. The Chairman, Grade Moderation Committee shall be responsible for the display of grades in the department and for forwarding the final grades to the Examination Section. The Chairman, Grade Moderation Committees shall also retain the record-copies of the marks and the grades along with the statistical parameters for all the courses moderated. The general guidelines for the moderation of grades are given in *Annexure-C*. One copy of distribution of marks and the question paper will be sent to the examination section along with grades by the Department. |
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| **Scrutiny of Grades, Tabulation and declaration of Results** | 20 | (1) | A student may apply for scrutiny of grades to the Chairman BoS, within three days from the scheduled date of display of grades. A committee consisting of the Dean Academics (UG), the concerned Chairman of the Grade Moderation Committee and the course Coordinator may check the entry of the weights from different components of evaluation and their addition. The results of scrutiny may lead to either a change in grade due to mistake(s) in any of the aspects scrutinized by the committee or the grade may remain unchanged. The results will be intimated to the Examination Section within three days from the date of receiving the application in the department as per academic calendar. |
| | | (2) | In exceptional circumstances the grade(s) of a student or a number of students may be scrutinized by a committee constituted by the VC. |
| | | (3) | The controller of examination shall organize the tabulation of grades and declaration of results. CoE shall be the custodian of records related to examination and results. |
| **Unfair Means** | 21 | | In case a student is found adopting or suspected of adopting unfair means before, during or after the examination, or lifting or copying of work (s) of someone else and inserting it in his class work submissions, Project, Dissertation etc. without proper acknowledgement, credit and reference, such penal action shall be taken by the University against the student as may be necessary and adequate to uphold the sanctity and integrity of the examination system and the credibility of the University. The general instruction for penal action for use of unfair means are given in *Annexure D*. |
| | | (1) | All the cases regarding use of unfair means practices in the examinations shall be reported and placed before the 'Unfair Means Scrutiny Committee". The Controller of Examinations shall convene the Unfair Means Scrutiny Committee from time to time as per the requirements. |
| | | (2) | The Unfair Means Scrutiny Committee shall be constituted as under:<br>1. Dean Academic (UG)- Chairman |

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| | | | 2. Dean Academic (PG)-Member<br>3. Dean of Students Welfare-Member<br>4. Head of the concerned Department-Member<br>5. Controller of Examinations-Member<br>6. AR Academic (UG)-Member<br>7. Asstt. Controller of Examination-Convener |
| | | (3) | For Project, Class Work Submission, Mid Term Examination etc., the Course coordination committee may report the matter to the BoS. The BoS may after considering the matter reported to it and after giving an opportunity to the concerned student(s) to explain his/her conduct impose appropriate penalty, including the award of grade in the concerned course (s) on the concerned students(s). |
| **Attendance, Absence, Leave and Withdrawals** | 22 | (1) | All the students of B. Tech. (Evening) program are expected to attend every lecture, tutorial, practical or drawing class scheduled for them. |
| | | (2) | The students of B. Tech. (Evening) must have a minimum attendance of 75% of the total number of classes including lectures, tutorials and practicals, held in a subject in order to be eligible to appear at the end term examination for that subject. |
| | | (3) | The Dean Academic (UG), authorized by the Vice Chancellor for this purpose may relax the minimum attendance upto 10% for reasons to be recorded. This relaxation may be granted on production of documents showing that the student was either busy in the authorized activities or suffering from any disease. The student should submit these documents to the course coordinator and chairman BoS within seven days of resuming the studies. |
| | | (4) | Under exceptional circumstances, the Vice Chancellor may further relax the minimum attendance upto 5%. |
| | | (5) | Attendance of the students shall be monitored and displayed during a semester as per the guidelines approved by the AC/BoM. The guidelines for monitoring the attendance of the students are given in *Annexure-E*. |
| | | (6) | The names of the students whose attendance is less than 75% {subject to the relaxation mentioned in 23 (3) and /or 23 (4)} in the classes held in a course will be intimated by the Course Coordinator on the last teaching day, to the Chairman, BoS, who will consolidate the list for all such students for all the courses of a given yearly level of a program and display it on the notice board of the Department. The list of such students shall also be forwarded to the COE. These students shall not be allowed to appear in the end term examination of that course and shall be awarded the grade 'F' irrespective of their performance in Class Work Sessional (CWS)/ Mid Term Examination (MTE), etc. |
| **Make-up Examination on Medical/Extra Ordinary Ground** | 23 | (1) | Students who have missed the mid-term examination for valid reasons (*Annexure F*) may become eligible for a make-up examination subject to the permission given by |

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| | | | the Dean Academic (UG) on the clear cut recommendations of Chairman BoS considering the merit of the case. It may be given to the deserving students. The student should make an application to the Dean, Academic UG, through Chairman BoS, within ten working days from the date of the examination missed, explaining the reasons for their absence. Applications received after this period will not be entertained. Further, there will be no makeup of the makeup examination. |
| | | (2) | If a student is absent during end Term examination of a course due to medical reasons or other special circumstance (*Annexure F*), he /she may apply for the award of 'I' grade to the Chairman BoS of the concerned department offering the course, through the Course Coordinator, make-up-examination will be allowed only if a student has not been disqualified earlier, due to shortage of attendance. The Chairman BoS may forward this request to Dean Academic (UG) and COE. Make-up examination shall be normally held along with the supplementary examination of End Term Examination to convert 'I' grade to proper letter grade. |
| **Supplementary Examination** | 24 | (1) | Supplementary examination in any course (s) shall be permissible only in the semester (s) in which the course (s) is/are run, supplementary examination will be held during vacations or latest by one month of the commencement of the next semester, which will be announced by Dean Academic (UG). |
| | | (2) | A student will carry the marks obtained by him/her in the Mid Term Examination, Practical examination and Sessional. |
| | | (3) | The highest grade that can be awarded in the Supplementary examination shall be 'D'. |
| | | (4) | Supplementary-examination will be allowed only if a student has not been disqualified earlier, either due to shortage of attendance or use of unfair means. |
| **Withdrawal from Course** | 25a | | A student who wants to withdraw from a course shall apply through the Chairman BoS to the Dean Academic (UG), on a prescribed form within one week from the end of the Mid Term examination under the advice of his/her program Advisor. If his/her request for withdrawal is granted, it will be recorded in the registration record of the student and the concerned Course Coordinator will be informed about it. The student will be awarded a withdrawal grade at the end of the semester. |
| **Semester Withdrawal** | 25b | | In case a student is unable to attend classes for more than four weeks in a semester he/she may apply to the Dean Academics through Chairman BoS, for withdrawal from the semester, which shall mean withdrawal from all the registered courses in the semester. However, such application shall be made under the advice of the program advisor, as early as possible and latest before the start of |

| | | | the end term examination, Partial withdrawal from the semester shall not be allowed. |
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| **Semester Withdrawal on Medical Grounds** | 25c | (i) | In case the period of absence on medical grounds is more than twenty working days during the semester, a student may apply for withdrawal from the semester, if he /she so desires. But as per provisions of section 25b application must be made to the Dean Academics (UG) through chairman BoS under the advice of the program advisor, as early as possible and latest before the beginning of end term examination. |
| | | (ii) | Any application on medical grounds shall be accompanied with a medical certificate from University doctor/Medical Officer. A certificate from a registered medical practitioner containing the registration number may also be accepted in those cases where a study is normally residing off-campus or becomes ill while away from the University. |
| **Rustication/Suspension/ Withdrawal from a Semester/year** | 25d | | A student rusticated from the University of suspended or debarred the classes due to any reason whatsoever or having withdrawn from a semester / year on medical grounds, shall have to meet the requirement of 75% attendance in each course in a semester and shall have to complete the program within its maximum time limit of seven years for Four Year B. Tech. (Evening) program as specified in Regulations excluding the period of expulsion, if any. |
| **Termination of enrolment** | 26 | **Due to Absence** | |
| | | | If a student registered in the first year of the program is continuously absent from the classes for more than four weeks without informing the Course Coordinators, the Coordinator shall immediately bring it to the notice of Chairman, BoS, of the concerned Department for informing the Dean Academic (UG). The names of such students shall be removed from the University rolls and such absence during first year will render the student ineligible for re-admission. |
| | | **On Academic Grounds** | |
| | | (a) | The student who has earned not more than 10 credits at the end of first semester shall be given a warning for his/her poor performance by Dean Academic (UG). The enrolment of a student in a program shall stand terminated if he/she fails to earn 18 credits at the end of first year. The communication regarding termination of enrolment shall be issued by the Dean Academic (UG) within fifteen days from the date of declaration of results". |
| | | (b) | The duration of the B. Tech. program is 4 years i.e. 8 semesters. The enrolment of a student will stand cancelled at the end of 7 years from the date of initial registration in the first semester. |
| | | (c) | A student whose enrolment has been terminated may appeal to the Vice Chancellor for reconsideration within fifteen days from the date of issuance of the |

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|---|---|---|---|
| | | | communication of termination and the appeal will be disposed off within fifteen days. If the appeal is allowed, his/her registration and enrolment shall be restored. |
| **Earned Minimum Credits and Minimum CGPA for the Degree** | 27 | (1) | The credits for the courses in which a student has obtained 'D' (minimum passing grade for a course) grade or higher shall be counted as Credit earned by him/her. A student who has a minimum CGPA of 5.0 and earned the required number of credits as specified in the B. Tech. (Evening) curriculum he/she is registered for, is eligible for the award of the respective degree. |
| | | (2) | A student who has earned the minimum credits required for a degree but fails to obtain the minimum specified CGPA for this purpose, shall be allowed to register in course (s) till the minimum CGPA is attained within the maximum time limit for different programs. |
| **Interpretation of Regulations** | 29 | | In case of any dispute, difference of opinion in interpretation of these Regulations or any other matter not covered in these Regulations, the decision of the Chairman, AC shall be final and binding. |
| **Emergent Cases** | 30 | | Not with standing anything contained in the above Regulations, the Chairman of the AC may, in emergent situation, take such action including insertion, suspension or modification of any Regulation(s) on behalf of the AC as he deems appropriate and report it to the next meeting of the AC for its approval. |

## Course Structure for B.Tech (Evening) Program

### First Year

| Odd Semester | | | |
|---|---|---|---|
| S.No. | Subject | Credits | Category |
| 1. | Allied Engineering Course-1 | 4 | AEC |
| 2. | Department Core Course-1 | 4 | DCC |
| 3. | Engineering Analysis and Design | 4 | DCC |
| 4. | Communications Skills | 2 | HMC |
| | Total | 14 | |
| Even Semester | | | |
| S.No. | Subject | Credits | Category |
| 1. | Allied Engineering Course-2 | 4 | AEC |
| 2. | Department Core Course-2 | 4 | DCC |
| 3. | Department Core Course-3 | 4 | DCC |
| 4. | Management Studies Course | 3 | HMC |
| | Total | 15 | |

### Second Year

| Odd Semester | | | |
|---|---|---|---|
| S.No. | Subject | Credits | Category |
| 1. | Department Core Course-4 | 4 | DCC |
| 2. | Department Core Course-5 | 4 | DCC |
| 3. | Department Core Course-6 | 4 | DCC |
| 4. | Humanities & Social Science Course | 3 | HMC |
| | Total | 15 | |
| Even Semester | | | |
| S.No. | Subject | Credits | Category |
| 1. | Department Core Course-7 | 4 | DCC |
| 2. | Department Core Course-8 | 4 | DCC |
| 3. | Department Core Course-9 | 4 | DCC |
| 4. | Professional Ethics and Human Values | 2 | HMC |
| | Total | 14 | |

### Third Year*

| Odd Semester | | | |
|---|---|---|---|
| S.No. | Subject | Credits | Category |
| 1. | Department Core Course-10 | 4 | DCC |
| 2. | Department Core Course-11 | 4 | DCC/DEC |
| 3. | Departmental Elective Course-1 | 4 | DEC |
| 4. | University Elective Course | 3 | UEC |
| | Total | 15 | |
| Even Semester | | | |
| S.No. | Subject | Credits | Category |
| 1. | Department Core Course-12 | 4 | DCC |
| 2. | Department Elective Course-2 | 4 | DEC/DCC |
| 3. | Department Elective Course-3 | 3 | DEC |
| 4. | Department Elective Course-4 | 4 | DEC |
| | Total | 15 | |

*Individual departments may swap DCC courses in V/VI semester with DEC courses and vice-versa subject to the condition that the total credits at the end of Third year remain the same.*

## Fourth Year**

| | Odd Semester | | |
|---|---|---|---|
| S.No. | Subject | Credits | Category |
| 1. | Department Core Course-13 | 4 | DCC |
| 2. | Department Core Course-14 | 4 | DCC |
| 3. | Department Elective Course-5 | 3 | DEC |
| 4. | Department Elective Course-6 | 4 | DEC |
| 5. | B. Tech project | 4 | DCC |
| | Total | 19 | |
| | Even Semester | | |
| S.No. | Subject | Credits | |
| 1. | Department Core Course-15 | 4 | DCC |
| 2. | Department Elective Course-7 | 4 | DEC |
| 3. | Department Elective Course-8 | 3 | DEC |
| 4. | B. Tech Project (Contd. From VII semester) | 8 | DCC |
| | Total | 19 | |

** *Individual departments may swap DCC courses in VII/VIII semester with DEC courses and vice-versa (excluding the Project) subject to the condition that the total credits at the end of 4th year remain the same.*

## Table-4 STRUCTURE FOR GRADING OF ACADEMIC PERFORMANCE

| Academic Performance | Grades | Grade Points |
|---|---|---|
| Outstanding | $A^+$ | 10 |
| Excellent | A | 9 |
| Very Good | $B^+$ | 8 |
| Good | B | 7 |
| Average | $C^+$ | 6 |
| Below Average | C | 5 |
| Marginal | D | 4 |
| Poor | F | 0 |
| Incomplete | I | -- |

**Explanation:**

**'F' Grade**

The 'F' grades denote poor performance, i.e. failing course. 'F' grade is also awarded in case of poor attendance (see attendance Rules)

For the other (elective) course in which 'F' grade has been awarded, the student may take the same course or any other course from the same category. Further, 'F' grade secured in any course stays permanently on the grade card. The weight of 'F' grade is not counted in the calculation of the CGPA however, it is counted in the calculation of the SGPA.

In case a student is awarded a failing grade in the major project, he/she shall have to repeat the course in the form of a new project. Such a student will have to work full time on the project for a minimum period of four months and maximum 'B' grade can be awarded to the student.

**'I' grade**

This refers to an 'incomplete' grade which is required to be converted into a regular letter grade as provided in section 24(2) of Regulations for the B. Tech programs. The guidelines for the award of 'I' grade are given in Annexure-B 3.

## Calculation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

$$S.G.P.A. = \frac{\sum_{i=1}^{n} C_i \times P_i}{\sum_{i=1}^{n} C_i}$$

Where,

$C_i$ = Number of Credits of the $i^{th}$ course of a semester for which SGPA is to be calculated

$P_i$ = Grade Point obtained in $i^{th}$ course

$i$ = 1,.............n , represent the number of course in which a student is registered in the concerned semester.

$$C.G.P.A. = \frac{\sum_{i=1}^{m} C_i \times P_i}{\sum_{i=1}^{m} C_i}$$

Where,

$C_i$ = Number of Credits of the $i^{th}$ course of a semester.

$P_i$ = Grade Point obtained in $i^{th}$ course.  A grade lower than 'D' (i.e. grade point < 4) in a course shall not be taken into account.

$i$ = 1,.............n , represent the number of courses in which a student was registered and obtained a grade not lower than 'D' upto that semester for which CGPA is to be calculated.

### General Guidelines for the Award of Grades

The following are the general guidelines for the award of grades:

(i)     All evaluations of different components of a course shall be done in marks for each student.

(ii)    The marks of various components shall be reduced to approved weights as indicated in the scheme of Teaching and Examination and added to get total marks secured on a 100-Point scale.  The rounding off shall be done only once and on the higher side.

(iii)   The method suggested in Annexure-B1 shall be used for the award of grades with or without marginal adjustment for natural cut-offs.

(iv)    In case of any difficulty the method suggested in Annexure-B2 can be used.

(v)     It is suggested that there will not be more than 10% (rounded off to near integer value) $A^+$ grade.

(vi)    The provisional grades shall be awarded by the Coordination Committee of the course consisting     of all the teachers involved in that course.  The course coordinator shall have full responsibility for  this purpose.

(vii)    The grades so awarded shall be moderated by BoS of a Department.

(viii)   For a student to get passing grade, he/she will have to appear in End Term Examination.

(ix)    The procedures for evaluation and award of grades for major project shall be as given in the Annexure B4 of Regulations for the B. Tech programs.

**Statistical Method for the Award of Grades (For Courses in which number of students is more than 30)**

For the award of grades in a course, all component-wise evaluation shall be done in **marks**. The marks of different components viz. Mid Term Examination (MTE), End Term Examination **(ETE)**, Course Work Sessionals (CWS) and Practical Sessionals (PRS) would be reduced to relative **weights of** each components as approved by the AC and added. Marks so obtained shall be out of 100 **and the** same would be converted to grades following the guidelines given below:

The statistical method shall invariably be used, with marginal adjustment for natural cut-off. The mean and the standard deviation of marks obtained of all the students in a course shall be calculated and used to convert the marks into normal variate (Z). The normalized marks (Z) shall be arranged in decreasing order to work out ranges for different letter grades.

$$Z = \frac{X - \bar{X}}{\sigma}$$

Where X = Actual Marks obtained, $\bar{X}$ = Mean of marks and $\sigma$ = Standard deviation.

The grade boundaries are left to the discretion of BOS. The set of boundaries for Z variate is mentioned in the Table-5 below:

**Table-5 : Set of Boundaries for Z variate**

| Lower Range of Z | Grade | Upper Range of Z |
|---|---|---|
| >1.5 | $A^+$ | -- |
| >1.0 | A | $\leq 1.5$ |
| >0.5 | $B^+$ | $\leq 1.0$ |
| >0.0 | B | $\leq 0.5$ |
| >-0.5 | $C^+$ | $\leq 0.0$ |
| >-1.0 | C | $\leq -0.5$ |
| >-1.5 | D | $\leq -1.0$ |
| -- | F | $\leq -1.5$ |

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**Awards of Grades Based on Absolute Marks System (For Courses in which number of students is less than or equal to 30)**

The award of grades based on absolute marks out of 100 shall be made as given in Table-6 below:

**Table-6: Marks Boundaries for Grades in Absolute Marks System**

| Marks | Grade | Marks |
|-------|-------|-------|
| $91 \leq$ | $A^+$ | $\leq 100$ |
| $82 \leq$ | A | $\leq 90$ |
| $73 \leq$ | $B^+$ | $\leq 81$ |
| $64 \leq$ | B | $\leq 72$ |
| $55 \leq$ | $C^+$ | $\leq 63$ |
| $46 \leq$ | C | $\leq 54$ |
| $35 \leq$ | D | $\leq 45$ |
| - | F | $\leq 34$ |

## Award of 'I' Grade

a) If a student is absent during End Term Examination of a course due to medical reasons or other special circumstances, he/she may apply for the award of 'I' grade to the Chairman, BoS through the Course Coordinator, provided that he/she has not been disqualified due to shortage of attendance. The concerned course coordinator shall have to be convinced about the extraordinary circumstances and shall have to certify the attendance record before this rarely used option to award 'I' grade is recommended. The Chairman BoS may award 'I' grade.

b) The 'I" grade so awarded shall be notified by the Department to which the student belongs and a copy of the notification will be endorsed to the COE and to the concerned Course Coordinator (e.g. the notification for 'I' grade of a Mechanical Engineering student will be notified by the Department of Mechanical Engineering on the recommendation of the concerned Course Coordinator, even if the course pertains to another Department.

c) The 'I' grade shall be converted into a proper letter grade as per the provisions in Regulations 24(2) after make up examination is over and the requirements of the course are completed by the student and shall be sent to the COE.

d) In extra ordinary circumstances, the period of conversion of 'I' grade may be extended to the next semester, with the approval of the Dean, Academics (UG) on his own or on the recommendation of the Course Coordinator and the Head of the Departments.

e) In extra-ordinary circumstances, on the recommendation of the Dean, Academic (UG), the Vice-Chancellor may order the award of 'I' grade to a student/class or a batch of students taking a particular course. The conversion of 'I' grade into a regular grade or any other action shall be as per the directive of the Vice-Chancellor.

## Procedure for Conduct and Evaluation of B.Tech (Evening) Project

a) This course will be offered in the final year of the B.Tech (Evening) program and its total duration will be two semesters.

b) Head of the department shall appoint a project coordinator on the advice of BoS from amongst the faculty members of the department who will act as the course coordinator.

c) The project can be carried out by the student either individually or in a group. However the number of students in a group will generally not exceed four.

(d) The project coordinator will invite proposals from the faculty members and students and finalize the project problems allotted to various groups by August 31, in the $7^{th}$ semester.

e) An L-T-P loading of 0-0-4 and 0-0-8 will be shown in the time table of students in the seventh and eighth semesters, respectively and the students would be required to work on their projects during these periods. However, no teacher will be assigned for these periods and the progress of students will be monitored by their respective supervisors.

f) The evaluation will be based upon mid –term examinations (MTE) and an end term examination (ETE) with a weightage of 40% and 60% respectively.

g) Mid Term examination will be held in each of the $7^{th}$ and $8^{th}$ semesters. The mid-term examination will involve report submission, presentation and oral viva-voce. For this purpose, suitable committees will be constituted by the BoS for evaluation of report, presentation and oral viva-voce. The project examination committees will award marks to individual students and forward them to the project coordinator who will maintain these record.

h) The end term project examination will be carried out at the end of $7^{th}$ (for 4 credits) and $8^{th}$ (for 8 credits) semester respectively, within 10 days form the last theory paper. For this purpose, suitable examination committees will be appointed by the BoS in consultation with the project coordinator, with at least one external examiner. In case an examiner from outside the University is not available, faculty member of the University from outside the Department may be appointed as an external examiner after taking his/her consents.

i) · The students will be required to submit a final project report to the project coordinator, at least 3 days before the date of final project examination.

j) The final examination may be in the form of demonstration in the laboratory and viva-voce or only viva-voce depending upon the nature of the project.

k) The examination committee will award marks to individual students and forward them to project coordinator who will compute grades in accordance with the prescribed procedures.

l) The Grade Moderation Committee for the course will be the same as that for other courses of the class.

m) In case a student is awarded a failing grade in the major project, he/she shall have to repeat the course in the form of a new project. Such a student will have to work full time on the project for a minimum period of 4 months.

n) Normal attendance regulations will not apply to this course.

## Guidelines for Moderation of Grades

a)  The date of moderation should be made a part of the Academic Calendar of the University.

b)  Two-tier moderation be adopted, both for the subject and for the Semester (SGPA, CGPA), Minor adjustment should be possible during moderation, particularly in the marginal cases. Chairman, BOS should invariable retain a copy of the grades sent to Academic Section so that CGPAs may be calculated without having to make a reference to the Academic Section for this purpose.

c)  All concerned faculty members should invariably be present for the moderation committee meeting in case a faculty member anybody is going out on University duty, he/she will hand over his/her inputs for moderation with a colleague, who should present it, in the meeting.

## Instruction for Penalty for Use of Unfair Means

1.  The main instruction for the conduct of a student in the examination hall shall be printed on the cover page of the answer sheets. Any contravention of these instructions and the use any unfair means will render the student liable for punishment.

2.  As soon as student is suspected by the invigilator having resorted to unfair means, his/her `answer-book shall be seized. The paper etc. duly signed by the invigilator found in possession of the student shall be attached with answer-book in his/her present. The student shall then be asked to complete part II of the prescribed form and sign it. This form shall than be endorsed by the Invigilator.

3.  After completing all the above formalities, a fresh answer-book shall be given to the student for completing the examination.

4.  After a particular examination is over, these answer-books (duly marked I, II) shall or delivered separately to the COE together with the report form duly completed in all respects.

5.  All the cases reported in the category of unfair means shall be forwarded to the unfair means scrutiny committee which will inquire into them and submit its recommendation after laying down clearly the nature of the offence listed below to the Vice-Chancellor for consideration and necessary orders.

6.  The action as given in table may be taken for different categories of offense under these Regulations.

### Penalty for use of Unfair Means

| S.No. | Nature of Offence | Action to be Taken |
|---|---|---|
| A | (a) A student found talking to another student during the examination hours. <br> (b) If during the examination hours i.e. after receipt of the question- paper and before handling over the Answer book a student is found to be talking to a person outside the examination hall while going to the urinal etc. <br> (c) Changing seat in the examination- hall without permission. <br> (d) Committing any breach of any direction given to the student. | The first answer-book to be withdrawn and cancelled and the second answer book to be provided and evaluated. |
| B | (a) Attempt to influence the examiner by an appeal in the answer-book. <br> (b) Writing either the questions set in the paper or solutions thereof on paper/electronic device etc. while during the examination. <br> (c) Possession of cell phone or any other item of such type of communication in examination hall. <br> (d) Intentionally tearing off the Answer Book/a part thereof or a continuation sheet. | The examination of the concerned paper to be cancelled. |

| | | |
|---|---|---|
| | (e) Using abusive or obscene language in the answer book.<br>(f) Misbehaving with the Superintendent/Invigilator/staff on duty or with any other candidate in or around the Examination Centre before, during or after the examination.<br>(g) Leaving the examination room without the permission of the Superintendent of the Examination or without handing over the answer book to the Invigilator /In-charge or without signing the attendance sheet. | |
| C | To be found in possession of any written or cyclostyled notes or any printed materials or notes written on any part of the body/clothing or instruments such as set square, electronic device etc. or having notes written on chair, table, desk or drawing board or cover of the calculator etc which could be helpful to him/her in answering the paper or could be helpful to another candidate in that Examination Hall during the examination. | All the examinations (Theory+Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled. |
| D | (a) If during the examination hours i.e. after receipt of the question paper and before handling - over the answer book a student is found:<br>(i) To be copying or to have copied from any paper, book or note written on any part of his/her clothing or body or table or desk or instruments like setsquare, etc.<br>(ii) To be consulting notes or books while being outside the examination hall during examination hours.<br>(iii) Passing on a copy of question(s) set in paper or solution thereof to any one.<br>(iv) To have received help from or given help to another candidate through some written material/ electronic device pertaining to the questions set in the paper concerned.<br>(v) To have allowed any other candidate to copy from his/her answer-book.<br>(vi) Communicating or attempting to communicate directly or through someone else with the examiner or anybody connected with the University examination for influencing them in the award of marks.<br>(b) The candidate on being challenged/searched during the course of examination by the Superintendent, Invigilator or a staff on duty, swallows a note/ paper or runs with it or is guilty of causing disappearance or destroying any such material with the intention of obliterating the evidence of the material possessed by him/her.<br>(c) Gross misbehavior i.e. threatening with | All the examinations (Theory + Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled, and the student to be debarred from registering the courses offered for next semester except for back papers (for which attendance is not required and the student has acquired marks for continued evaluation and mid semester examination). The University Campus thus remains debarred for such student for next semester, except that he/she is allowed to sit in back paper examination. However, for continuation of registration in the degree program. The student has to pay the fees as applicable to a UG/PG student even for the period of his/her debarment. |

| | | |
|---|---|---|
| | physical force in connection with the examination with the Superintendent, the Invigilator/ staff on duty working at the Examination Centre with any other candidate in or around the examination Centre, before, during or after the Examination. <br> (d) When the candidate disturbs the examination or attempts to do so. | |
| E | (a) Found in possession of a solution of a question set in the paper through the help of any student, supervisory or ministerial staff or some other agency. <br> (b) Found guilty of having made previous arrangement to obtain help in connection with the question paper in cases not covered by the above provision. <br> (c) Smuggling in an answer-book or part of it, taking out or arranging to send out an answer-book or part of it. <br> (d) When the candidate replaces or gets replaced during the course of the examination his / her answer book or any page or continuation sheet with any other unauthorized book, page or continuation sheet. <br> (e) When the candidate replaces or gets replaced an answer book or its any page or continuation sheet after the examination or manages to write or gets written an answer book including the continuation sheet, if an answer to any of the questions which he had not written earlier during the examination. | All the examinations (Theory+Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled, and the student to be debarred from registering the courses offered for the next semester including back papers. The University Campus thus remains debarred for such student for next semester and he/she will only be able to register for courses in the University for next to next semester. However, for continuation of the registration in the program he/she has to pay the fee as applicable to UG/PG student even for the period debarment. |
| F | Found guilty of: <br> (a) Writing deliberately another students' roll no. in his/her answer book or found in possession of an answer-book not his/her own or impersonating another candidates in any examinations. <br> (b) Guilty of serious misconduct in the examination hall or non - compliance with the instructions of the superintendent or any of the invigilators in the examination hall. | All the examinations (Theory+Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled, and the student to be debarred from registering the courses offered for the next semester including back papers. The University Campus thus remains debarred for such student for next two semesters or expulsion from the University depending on the gravity of the offence, and he/she will only be able to register for courses in the University after the expiry of two semesters. However, for continuation of the registration in the program he/she has to pay the fee as applicable to UG/PG student even for |

| | | the period debarment. |
|---|---|---|
| G | Found guilty of:<br>(a) Inciting other students to leave the examination room or disrupt the examination or attempts to do so.<br>(b) Gross misbehavior in connection with the examination with the Invigilator on duty or the other staff working at the examination and is also guilty of assault or inflicting any injury on such person. | All the examinations (Theory+Practical) including back papers and the marks awarded in quizzes, marks for continued evaluation and mid-term examination and end term examination for that semester to be cancelled. This implies that registration of the student for that Semester stands cancelled, and the student to be debarred from registering the courses offered for the next semester including back papers. The University Campus thus remains debarred for such student for next three semesters or expulsion from the University depending on the gravity of the offence and he/she will only be able to register for courses in the University after the expiry of three semesters. However, for continuation of the registration in the program he/she has to pay the fee as applicable to UG/PG student even for the period debarrement. |
| H | (a) Any person who is not a candidate for any examination found committing or abetting in committal of any of the offences mentioned above. | To be dealt with by the Vice Chancellor in an appropriate manner. |
| I | CASES NOT COVERED BY THESE REGULATIONS. | To be decided by the Vice Chancellor. |

Note:
(a) In these Regulations the year means the academic year.
(b) Having once made use of dishonest or unfair means or having once indulged in disorderly conduct in the examination, if the candidate again makes use of dishonest or unfair means or indulges in disorderly conduct in the same examination, he/she shall be awarded punishment prescribed in that sub-clause which is next to the once in which his/her case falls or any higher punishment.
(c) In case of extenuating circumstances, the above punishment may be reduced by the Vice Chancellor depending upon the merits of the case.

# FORM FOR REPORTING CASES OF USE OF OR ATTEMPT TO USE UNFAIR MEANS AT THE UNIVERSITY EXAMIANTION

Note: One sheet should be used for one candidate only, if printed forms run short, the form should be photocopied and used.

Name of examination ........................................................................................................

Name of Student ..............................................................Roll No............................

Complete Postal Address (Including Phone/Mobile No.)............................................................

.........................................................................................................................

Subject in which the candidate is reported to have used or intended to use unfair means ..................

Day ........................... Date ..........................Time ....................................................

1. Particular of book, papers, electronic gadgets etc found in possession of the student and submitted along with the answer sheet (all these materials should be signed by the Invigilator of examination and the student).

Name of book (if any)          (a) .................................................

                               (b) .................................................

                               (c) .................................................

Number of leaves of books ....................................................................

Number of          (a)     Manuscript slips: .................... Sheets ....................

Any other articles such as electronic gadget etc.

(a) .................................................

(b) .................................................

(c) .................................................

2. Statement of the student to be obtained at once in his/her own handwriting.

Were the above articles recovered from your possession? ..............................

Why did you keep them with you inspite of clear instructions? ........................

Did you make any use of them? ..........................................................

Have you anything else to state? ..........................................................

Date ............ Time ...............                    (Signature of Student)

Certified that this statement was made in my presence.

Certified that the candidate declined to give any statement. (Certificate not applicable should be crossed by the invigilator)

Date ............ Time ...............                    (Signature of Invigilator)

Date ............ Time ...............                    (Signature of Superintendent)

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## GUIDE LINES FOR ATTENDANCE RECORDS AND PREPARATION OF LIST OF STUDENTS NOT ELEIGIBLE TO APPEAR IN THE END TERM EXAMIANTION

| Step | Action | Performa to be filled | Target Dates |
|---|---|---|---|
| First | Communication form Chairman, BoS to course coordinator requesting to submit the list of students having short attendance on specified format up to prescribed date | ATT.1/7 | One week before the last date of display as per academic calendar |
| Second | Consolidation of the list of such students by Chairman BOS and Notice form, chairman, BoS for short attendance | ATT.2/7 | |
| Third | Communication from AR(ACAD-UG) to parent/guardian of student having short attendance. | ATT.3/7 | |
| Fourth | Communication from Chairman BoS to course Coordinator requesting to submit the final lit of students having short attendance on specified format up to prescribed date. | ATT.4/7 | |
| Fifth | Preparation on list of detained students by BoS and recommendation to this effect. | ATT.5/7 | |
| Sixth | Notices form Chairman, BoS to Students Notice Board. | ATT.6/7 | |

**From Chairman, BoS to Course Coordinators**

**DEPARTMENT OF** ................................................

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

Academic Year ............................................

Class ............................................

Semester .......................... Odd/Even

Course Title ....................................................... Course Code ...............................

**All Course Coordinators**

Please inform the name s of UG students having less that 75% attendance (L+T+P) upto ................. (as per academic calendar) in the course of which you are the coordinator in Odd /Even Semester ................. The information may please be sent to undersigned **latest by** .................. In the proforma given below along with a photocopy of attendance record of entire class. If there is no short attendance case in your course, please write NIL in the proforma.

| S.No. | Student enrolment Number | Name of Student | Branch | Attendance Record (L+T+P) | | |
|---|---|---|---|---|---|---|
| | | | | Classes Held | Classes Attended | Percentage Attendance |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Signature**

Name of the Course Coordinator ...................................

**Form Chairman, BoS to Notice Boards**

DEPARTMENT OF ................................................................

## NOTICE

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**Academic Year ............ Class ................... Semester ............... Odd /Even**

As per attendance Regulations in force, astudent is required to have attended at least 75% of the total classes held in a subject, in order to be eligible to appear in the end-term examination of that subject. Upto ........................ (as per academic calender0, the following students are having short-attendance in the courses indicated against their names. These students are advised to be extra careful and make up for the short attendance; otherwise they may be debarred from appearing in the end term examination.

| S.No. | Student enrolment No. | Name of Student | Branch | Course | | Percentage Attendance |
|---|---|---|---|---|---|---|
| | | | | Code | Title | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Chairman,BOS**

Copy to:

1. AR, Academic (UG) to inform Student's parent/guardian
2. Students Notice Board
3. Respective program Advisors with the request to call the students and counsel them.

**NOTICE**           **UNDER CERTIFICATE OF POSTING**

**From Assistant Registrar (Academic-UG) to student's parent / guardian**

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**No:**                                           **Dated ...............**

Dear Guardian /Parent

Your ward is studying B.Tech. (Evening) ( .....................Year ) degree course at this University.

I have to inform you that as per Regulations of the University governing the attendance of the students a student is required to have at least 75% attendance in a course in a semester to be eligible to appear in the End Term Examination of that course.  But your ward is not attendingthe classes regularly and his/her attendance has fallen below the required level in following course. (s)

| S.No. | Course | | S.No. | Course | |
|---|---|---|---|---|---|
| | Code | title | | Code | Title |
| | | | | | |
| | | | | | |
| | | | | | |

This is for your kind information.  You may also kindly advise your ward to be regular in attending the classes and bring his/her attendance to the required level failing which he/she will not be allowed to appear in the examinations.

Yours truly,

**AR Academic-UG**

**From Chairman, BoS to Notice Boards**

**LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)**

**DEPARTMENT OF** ...................................................................

**Academic Year** ...........................................

**Semester** ........................... Odd/Even

**Course Title** .......................................................

**Course Code** ..............................

**All Course Coordinators**

Please inform the names of UG students having less that 75% attendance (L+T+P) upto ................. (as per academic calendar) in the course of which you are the coordinator in Odd /Even Semester .................... The information may please be sent to undersigned **latest by** .................. In the proforma given below along with a photocopy of attendance record of entire class. If there is no short attendance case in your course, please write NIL in the proforma.

| S.No. | Student Enroll No. | Name of Student | Branch | Attendance Record (L+T+P) | | |
|-------|-------|-------|-------|-------|-------|-------|
| | | | | Classes Held | Classes Attended | Percentage Attendance |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Name of the Course Coordinator .............................            Signature

**From Chairman BOS**

DEPARTMENT OF ...................................................

LIST OF STUDENTS NOTELIGIBLE TO APPEAR IN END TERM EXAMINATION AS PER REGULATIONS

Academic Year .......................... Class ................

Semester ............................ Odd/Even

Course Title ..............................................

Course Code ..............................

| S.No. | Enrolment No. | Name of Student | Percentage attendance |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1.  **(a)** Dates on which the names of the students were palace on the Notice Boards of the Department ........
    (b)  If the names of the students were note placed on the Notice Boards, specify the reasons for the same.
2.  As per the information given by all teachers of this subject, there are no other cases of shortage of attendance in this subject.
3.  The students as listed above are detained from appearing in the examination in the subject noted above as per the attendance record given above.

**Signature of Chairman BoS**

**Members of and chairman**

Members ............................                          (CHAIRMAN)

**DEPARTMENT OF** .............................................................

## NOTICE

### LIST OF STUDENTS HAVING SHORT ATTENDANCE (<75%)

**Academic Year** .......................... **Class** ................

**Semester** ........................... **Odd/Even**

On the recommendation of department /centre academic committee meeting held on ..........
Following students are herby detained from appearing in the end term examination in subjects listed
against their names.

| S.No. | Student enrolment No. | Name of Student | Branch | Course | | Percentage Attendance |
|-------|-----------------------|-----------------|--------|--------|------|----------------------|
| | | | | Title | Code | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Date:**                                                                 **Chairman ,BOS)**

Copy to:

1.   AR, Academic (UG) to inform Student's parent/guardian
2.   Students Notice Board
3.   Respective program Advisors with the request to call the students and counsel them.

## LIST OF STUDENTS HAVING SHPORT ATTENDANCE (<75%)

**Academic Year** ...........................

**Class** ................

**Semester** ............................ **Odd/Even**

As per attendance Regulations .......... And recommendation made by competent authority, following students are not found eligible to appear in End Term Examination of Odd/Even semester in the courses mentioned before their name, Invigilators are requested not to allow these students to appear in the concerned examinations.

| S.No. | Student Enrolment No. | Name of Student | Branch | Course | | Percentage Attendance |
|---|---|---|---|---|---|---|
| | | | | Title | Code | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Date :**                                                    **Assistant Registrar-UG**

## Academic Section (UG)
## Delhi Technological University

### FORM OF APPLICATION
for
## Make-up Examination for Mid/End Semester(Odd/Even) Examination 201..-201..

| The form when completed should be submitted to: | *(For use by the Academic Section {UG})* |
|---|---|
| **The Assistant Registrar,** **Academic Section(U.G.),** *Delhi Technological University* | **Permitted** by Dean Acad.(UG) / **NOT Permitted** by Dean Acad.(UG) |

| To be filled in by the applicant | |
|---|---|
| **Name:**................................................... | *Address for Communication:* |
| **Roll No:** .............................................. | ...................................................... |
| Mobile No.............................................. | ...................................................... |
| Email:.................................................... | |

A.    Courses requested for Make-up Examination:

| S.No | Course Code | Name of the Course | Credits | Date & time slot of the Exam | Reason for missing the Exam |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |

B.    Supported Mandatory Documents for the claim:*(Please tick the annexed documents below)*

| | |
|---|---|
| | Recommendation of concerned Warden (*if the student resides in University Hostel*) |
| | Medical Certificate issued by the Medical Officer of the Hospital the student was admitted duly endorsed by Medical Officer of University Health Centre |
| | Proof of admission in Hospital and discharge slip etc |
| | Proof of medical tests conducted |
| | Fitness certificate of the hospital |
| | Endorsement by parent/guardian on the certificate of treatment(*if the student is a Day Scholar*) |
| | Medical certificate from hospital where Parents/real brother or sister/spouse was admitted in ICU duly endorsed by Medical Officer of University Health Centre |
| | Prior Approval of Dean Acad(UG) for any authorized work in the academic interests |

### DECLARATION

I hereby solemnly declare that the foregoing facts are true and correct and nothing is false therein and nothing materi
has been concealed there from.  I also agree that in case any information given by me herein before is found false at lat
date, the result for the requested courses for  make-up examination be cancelled.


Signature of the Parents/Guardian                                            Signature of Student
Name (in Capital Letters)                                                          Name (in  Capital Letters)
Date :                                                                                          Date :
Place :                                                                                        Place :