

## 1. SCOPE

Scope of Certification to ISO 9001:2015 Quality Management System covers all the academic departments of the University and support branches namely Examination, Research & Consultancy, Innovation & Incubation, Administrative, Planning, Library, Training & placement, co-curricular & extra-curricular Student Activities, Stores & purchase, Security, Engineering cell, International affairs, Health Centre, Central workshop.

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## 2. REFERENCES

ISO 9001: 2015, Quality Management System – Fundamentals and Vocabulary

## 3. TERMS AND DEFINITIONS

Abbreviation used	Meaning
B. Tech.	Bachelor of Technology
PhD	Doctor of Philosophy
MBA	Master of Business Administration
M. Tech.	Master of Technology
UG	Under-Graduation
PG	Post-Graduation
HOD	Head Of Department
HRD	Human Resource Development
IQAC	Internal Quality Assurance Cell
T&P	Training & Placement
R&D	Research & Development
IRD	Industrial Research & Development
AA	Alumni Affairs
NAAC	National Assessment and Accreditation Council
TEQIP	Technical Education Quality Improvement Programme
APAR	Annual Performance Appraisal Report
BOM	Board Of Management
IPR	Intellectual Property Rights

IIF	Innovation and Incubation Foundation
NIRF	National Institute Ranking Framework
DTTE	Directorate of Training and Technical Education
NIELIT	National Institute of Electronics & Information Technology
NBA	National Board of Accreditation
PDF	Professional Development Fund
CAS	Career Advancement Scheme
USIP	University Student Internship Program
AIPR	Annual Immovable Property Report
SW	Student Welfare
GIAN	Global Initiative of Academic Networks

## 4. CONTEXT OF THE ORGANIZATION

### 4.1 PROFILE OF THE UNIVERSITY

Delhi Technological University (formerly Delhi College of Engineering) is a non-affiliating teaching-cum-research University engaged in fostering excellence in education, research and innovations in engineering and technology, applied sciences and management. Delhi College of Engineering, (initially established as Delhi Polytechnic) came into existence in the year 1941 to cater the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. The institution was set up at historic Kashmere Gate campus as a follow up of the Wood and Abott Committee of 1938. It comprised of a multi-disciplinary and multi-level institution offering wide ranging programmes in engineering, technology, arts and sculpture, architecture, pharmacy and commerce. In 1952 the college was affiliated with University of Delhi and started formal Degree level Programmes. From July 2009, the Delhi College of Engineering became Delhi Technological University a non-affiliating Technological University vide Delhi.

Government Act 6 of 2009. As a Delhi Technological University (DTU) it has the desired autonomy to excel and shape itself as a world class Technological University committed to foster engineering excellence and scientism together. University offers undergraduate, postgraduate and research programs in Engineering & Technology, Science and Management. The University is inspired by talent and driven by innovations and is firmly committed to

provide industry relevant, socially responsible manpower to meet the challenges of 21st Century. The culture of research and innovations is vibrant in the DTU campus which inspires students from UG levels onwards to engage in cutting edge technology development and discover the value and worth of the knowledge acquired by them during their studies. With its illustrious history spanning over 77 years the institution is marching on the pathways of excellence and is one of the highly sought-after university for the inspired students community and faculty. Our alumni have excelled in varied fields such as business and industry, administrative and regulatory services, research and education and social and human rights organizations.

### **4.1.1 ACADEMIC UNITS OF THE UNIVERSITY**

The academic units of the University are Departments and schools which organizes and conducts undergraduate (B. Tech.), postgraduate (M. Tech.) and doctoral (Ph.D.) programmes in relevant engineering/science, technological and management disciplines. The Centres are special inter-disciplinary units serving the University as a whole. As of date, the academic units of the University are:

#### **4.1.1.1 DEPARTMENTS**

- I. Department of Applied Chemistry
- II. Department of Applied Mathematics
- III. Department of Applied Physics
- IV. Department of Biotechnology
- V. Department of Civil Engineering
- VI. Department of Computer Science and Engineering
- VII. Department of Electronics and Communication Engineering
- VIII. Department of Electrical Engineering
- IX. Department of Environmental Engineering
- X. Department of Humanities
- XI. Department of Information Technology
- XII. Department of Mechanical Engineering

#### **4.1.1.2 SCHOOLS**

- I. Delhi School of Management
- II. University School of Management and Entrepreneurship (East Campus)

#### **4.1.1.3 CENTRES**

- I. Central Library
- II. Computer Centre
- III. DTU Innovation and Incubation Foundation
- IV. Training & Placement Cell
- V. Intellectual Property Rights Cell
- VI. Central Workshop
- VII. Health Centre

### **4.1.2 ACADEMIC PROGRAMMES**

The University as of date offers the following academic programmes.

#### **4.1.2.1 ENGINEERING & TECHNOLOGY**

##### **A. BACHELOR OF TECHNOLOGY (B. TECH.)**

- I. B. Tech. in Polymer Science & Chemical Technology
- II. B. Tech. in Mathematics & Computing
- III. B. Tech. in Engineering Physics
- IV. B. Tech. in Bio-Technology
- V. B. Tech. in Civil Engineering
- VI. B. Tech. in Computer Science & Engineering
- VII. B. Tech. in Information Technology
- VIII. B. Tech. in Software Engineering
- IX. B. Tech. in Electronics & Communications Engineering
- X. B. Tech. in Electrical Engineering
- XI. B. Tech. in Environmental Engineering

- XII. B. Tech. in Mechanical Engineering with Specialization in Automotive Engineering
- XIII. B. Tech. in Production & Industrial Engineering
- XIV. B. Tech. in Mechanical Engineering
- XV. B. Tech in Electrical Engineering (Evening)
- XVI. B. Tech in Electronics & Communication Engineering (Evening)
- XVII. B. Tech in Mechanical Engineering (Evening)
- XVIII. B. Tech in Civil Engineering (Evening)

### **B. MASTER OF TECHNOLOGY (M. TECH.)**

- I. M. Tech. in Polymer Technology
- II. M. Tech. in Nanoscience and Technology
- III. M. Tech. in Nuclear Science and Engineering
- IV. M. Tech. in Microwave and Optical Communication Engineering
- V. M. Tech. in Bioinformatics
- VI. M. Tech. in Bio Medical Engineering
- VII. M. Tech. in Industrial Bio Technology
- VIII. M. Tech. in Geotechnical Engineering
- IX. M. Tech. in Hydraulics & Water Resources Engineering
- X. M. Tech. in Structural Engineering
- XI. M. Tech. in Computer Science and Engineering
- XII. M. Tech. in Software Engineering
- XIII. M. Tech. in Information System
- XIV. M. Tech. in Signal Processing & Digital Design
- XV. M. Tech. in VLSI Design and Embedded System
- XVI. M. Tech. in Control & Instrumentation
- XVII. M. Tech. in Power System
- XVIII. M. Tech. in Environmental Engineering
- XIX. M. Tech. in Computational Design
- XX. M. Tech. in Production Engineering
- XXI. M. Tech. in Renewable Energy Technology
- XXII. M. Tech. in Thermal Engineering

#### **4.1.2.2 MANAGEMENT & HUMANITIES**

- I. MBA
- II. Executive MBA
- III. BBA
- IV. BA (Economics)

#### **4.1.2.3 PH. D.**

University offers Doctor of Philosophy (Ph.D.) Degree in all Engineering, Technology, Science, Management and Humanities Disciplines.

#### **4.1.3 CONTINUING EDUCATION PROGRAMME**

The University organizes various need based workshops and short term courses ranging from 1 day to several weeks duration for the in-service professionals, engineers, managers, faculty, staff and students. On the successful completion of this programme, participants are awarded certificates.

#### **4.1.4 SALIENT FEATURES OF THE DEGREE PROGRAMMES**

- Semester system
- Continuous assessment & evaluation of the students' performance
- Letter grades
- Credit based promotion
- Choice based Credit System (CBCS) based on rich electives
- Industrial Training
- Project based learning & assessment

#### **4.1.5 MEDIUM OF INSTRUCTION**

The medium of instruction at University is English.



#### **4.1.6 SOURCES OF FUNDING**

- Government of NCT of Delhi
- UGC, AICTE and other Central/ State Ministries/ departments
- Tuition fee
- Research & consultancy projects, design and testing services

These funds are used for infrastructure development, modernisation & upgradation of laboratories, recurring expenditure and other facilities. All the activities in the University are governed by the rules and regulations of the University and also by the conditions imposed by the funding agencies wherever applicable.

#### **4.1.7 BUSINESS DIMENSIONS**

The domain of activities of the University broadly covers the following:

- Engineering & Technology, Management Education leading to Bachelor (B. Tech.), (M.Tech. and MBA) and Doctoral (Ph.D) Degrees.
- Imparting knowledge to students beyond the prescribed curriculum.
- Continuing education for in-service professional-engineers and managers.
- Consultancy and Testing services.
- Design, Research & Development activities.
- Innovation & Incubation, IP creation

#### **4.1.8 FEATURES OF ACADEMIC PROGRAMMES**

Over the years, engineering and technology education in India has undergone significant changes in terms of goals, approach and contents. Today, a well-trained engineer/ technologist is expected to possess knowledge of basic and applied sciences and scientific methods, an in-depth understanding of the subject domain and professional competency in his/her area of specialization, versatility to work with inter-disciplinary groups and sensitivity to the needs

and aspirations of the industry in particular and the society at large. The curricula at DTU is designed to produce engineers/ technologists who would be capable of meeting these goals. The curriculum is reviewed and updated periodically to ensure continued relevance.

#### **4.1.8.1 UNDERGRADUATE PROGRAMME**

Undergraduate engineering students are taught a series of courses in basic sciences to develop understanding of scientific principles and methods, analytical ability and rigor. These courses are followed by courses in engineering and technology to provide a smooth transition from basic sciences to professional engineering courses. A series of courses in technical arts are designed to develop engineering skills through training in engineering drawing, measurements, computing skills, manufacturing technology and effective communication. The professional courses in the chosen field of specialization are meant to develop creative abilities for the application of basic and engineering sciences to engineering and technology problems involving planning, design, manufacturing, maintenance and research & development and innovation. In addition, courses in humanities and economics are incorporated to develop appreciation of the impact of science and technology on society. The under-graduate curriculum consists of two main components i.e. core courses and professional courses. The core courses lay emphasis on concepts and principles. It involves teaching of subjects in Basic Sciences, Humanities and Economics and Engineering Science. Attention is also paid to develop communication skills in English language - the medium of instructions. The Professional courses lay emphasis on system analysis, design, manufacturing and professional practice. There is an in-built flexibility to encourage students to specialize in streams of their choice through a system of professional and free electives. Presentation of a Seminar, Industrial Training/ internship in addition to the course work and further carrying out a thesis/dissertation are necessary components of undergraduate degree.

The University strives to foster among its students a strong desire and capacity for continuous learning as well as self-appraisal to develop sterling human & professional qualities\ and a strong sense of service to society through designed, curricular, co-curricular activities and congenial campus environment.

#### **4.1.8.2 POST-GRADUATE PROGRAMME**

##### **A. MASTER OF TECHNOLOGY (M. Tech.)**

The University in offering various M. Tech. programmes having uniformly maintained basic structure and philosophy of the post-graduate education in engineering in the country. All the M. Tech. programmes, regular or part-time, have their course work classified into two major categories: Core Courses and Elective Courses. The core courses are aimed at imparting knowledge of the relevant basics analytical-tools & techniques necessary to build-up on them elective (professional) courses. Core courses of a particular programme are compulsory for all the students registered in that programme. Elective courses are of professional nature. To be eligible for a degree, a student must complete requisite number of core and elective courses. However, to bring in flexibility a wide choice of electives is offered to the students in order to make their training broad based.

Presentation of a minor project in addition to the course work and further carrying out a thesis/dissertation are necessary components of post-graduate degree. The minor project should be on a topic relevant to the area of study, presenting the state-of-art work done on the subject. The literature survey conducted during the minor project should highlight the areas for further research work on the subject. The problem taken up for the thesis/ dissertation should be as far as possible on the work done during minor project. Both the minor project and thesis/dissertation are submitted in bound form and are presented during their respective evaluation. In case a student fails to undertake, complete & clear thesis work he/ she will not be eligible for award of Post-graduate degree.

##### **B. MASTER OF BUSINESS ADMINISTRATION (MBA)**

The programme is highly business centric that enables students to learn all the essential basic management knowledge required for handling business. The students learn broad business understanding, effective communication skills, strategic problem solving, networking skills, resource and time management, analytical skills and leadership. During the duration of the course, students foster managerial skills to manage effectively all possible situations related to business problems and decision making. The core courses in an MBA program cover

various areas of business such as accounting, finance, marketing, human resources, operations, and statistics. The specialisations include Marketing Management, Financial Management, Human Resource Management, Supply Chain Management, Information Technology Management and Knowledge & Technology Management. Apart from learning basic management skills, these courses focus on students to develop skillsets, toolkits and attitude suited for the complex business environment.

#### **4.1.8.3 DOCTORAL DEGREE PROGRAMME**

High calibre students with demonstrated capability can register themselves for Ph. D. degree even after their Bachelor degree in any branch of Engineering & Technology, Management and Humanities in the University. However, candidates registered in this programme directly after Bachelor degree are required to take-up adequate number of make-up courses from M. Tech. programme in the area the candidate is preparing to carry out research work. There is laid down course work requirement for the Doctoral Degree Programme for candidates registering after obtaining M. Tech. and B. Tech. degrees. The provisions in the rules and regulations governing the programme, aim at ensuring high quality of research leading to Ph. D. degree. Ph. D. programmes are offered on both regular and part-time basis. Ph. D. thesis is evaluated by a panel of examiners drawn from the peer group on the topic, both from India and abroad.

#### **4.1.9 EVALUATION SYSTEM OF STUDENTS**

The University follows semester system of education, namely odd and even semesters in a year. The salient features of the evaluation system of students are continuous assessment and evaluation of the students' performance and credit based promotion. Each course carries a numeral weightage called "Credit" to be earned by the students after successful completion of the course. At the end of the semester the students are awarded a letter grade in each course, depending upon the overall class performance. The evaluation is through Mid Semester Examination, End-Semester Examination, Class work sessional and Practical sessional. Class work sessional may include unannounced and announced quiz, test, tutorial work, home assignments, and subject seminar.

<i>Letter Grade</i>	<i>Performance rating</i>	<i>Grade Point equivalent</i>
O	Outstanding	10
A+	Excellent	9
A	Very Good	8
B+	Good	7
B	Above Average	6
C	Average	5
P	Pass	4
F	Fail	0
I	Incomplete	--

O, A+, A, B+, B, C and P grade are the pass grades.

Each letter grade indicates the level of performance of the student in a particular course, based upon a ten-point scale. Grade points (given in the following table) are used for computing the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA), SGPA is the weighted average of all the grades earned by a student in the registered courses in a particular semester and CGPA is the weighted average of all the grades earned since his entry into the University up to and including the last semester. CGPA is computed as follows:

$$\text{CGPA} = \frac{\sum C_i P_i}{\sum C_i}$$

Where  $C_i$  denotes credit assigned to the  $i^{\text{th}}$  course and  $P_i$  the grade point equivalent to the letter grade earned by the student in the  $i^{\text{th}}$  course. When a student repeats a course, the new grade earned by him replaces the earlier one in the calculation of the CGPA, notwithstanding that the grade earned earlier also appears on the grade card.

## 4.2 INTERESTED PARTIES

- Govt. of NCT of Delhi
- University Grants Commission (UGC)
- All India Council of Technical Education (AICTE)
- Ministry of Human Resource Development (MHRD), Govt. of India
- National Board of Accreditation (NBA)
- Board of Management, DTU
- Industry
- Students of University
- Parents
- Employers
- Teachers of University
- Technical and non-technical Staff
- University Administration
- Alumni of University
- Academic departments of University
- Non-academic departments providing support services
- National Informatics Centre (NIC)
- Central Board of Secondary Education (CBSE)
- Auditors
- Vendors

## 4.3 SCOPE OF THE QUALITY MANAGEMENT SYSTEM

The University has established, documented, implemented and is maintaining a Quality Management System (QMS) as per the requirements of ISO 9001: 2015 international standard. Continuous improvement in the effectiveness of QMS is as per planned arrangement, reviews and necessary actions. The University has:

- a) Determined the processes needed for the quality management system and their application throughout the organization process pertaining to all requirements of ISO 9001:2015 standards are being carried out in the University and no clause is excluded. The processes needed for the process for management activities, provision of resources, instructional design, delivery and control and measurement. The block diagram is shown at Annexure-II.

- b) Determined the sequence and interaction of the processes of the quality management system. This includes process pertaining to instruction planning, delivery and control as well as support, service and administrative processes.
- c) Determined the criteria and methods needed to ensure that both the operation and control of these processes are effective. The risk analysis is placed at Annexure-III.
- d) Ensured that all the resources and information required for operation and monitoring of the processes are available from time to time.
- e) Has planned arrangements for monitoring measurement, wherever applicable, and analysis of the processes.
- f) Has implemented the planned arrangements along with their control mechanism for the achievement of planned results and for continual improvement of the processes.

### **4.3.1 Locations**

- i. Delhi Technological University, Bawana Road, Delhi – 110042
- ii. University School of Management and Entrepreneurship, Vivek Vihar, Delhi-110095

## **4.4 QUALITY MANAGEMENT SYSTEM AND ITS PROCESSES**

### **4.4.1 GENERAL REQUIREMENTS**

The University management in accordance with the requirements of ISO 9001:2015 International standard is managing the processes. The University has not outsourced any process that affects conformity to requirements. The University conforms to all regulatory requirements of UGC, AICTE, Ministry of HRD and NBA.

The University has established the following documents of the quality management system:

- a) Statement of Quality Policy
- b) Statement of Quality Objectives
- c) Quality manual (this document)
- d) Documented procedures and records, as required by ISO 9001:2015 standard documents like forms, formats, work instructions, checklists and others which are required to ensure effective planning, operation and control of the processes.
- e) Records of performance of various activities of the quality management system. The documents are in the form of hard copy, as well as soft copy.

#### **4.4.2 QUALITY MANUAL**

The quality manual covers the requirements of ISO 9001:2015 standard opted for implementation at DTU. The quality manual makes reference to the quality system procedures and outlines the structure of documentation used in the quality system. The responsibility for maintaining/ updating the quality manual lies with Management Representative (MR). The quality manual is distributed as per the distribution list, given in the beginning of this manual.

The University has established a quality manual that include:

- a) The scope of the quality management system.
- b) An outline of the documented proceedings established for the quality management system and a reference to the detailed procedures contained in the procedural manual.
- c) Flow charts of processes depicting the procedure of performance of activities and also the interaction between various processes of the quality management systems.

#### **4.4.3 QUALITY SYSTEM OPERATING PROCEDURES (SOPs)**

Quality system procedures define the scope, responsibility, operating methods and the logical sequence of activities to complete the process/ functional activity. The procedures are contained in the functional manual of a department/ school/ centre including the system procedure common to all departments/ centres. The functional manual is duly indexed and contains list of associated work instructions and formats for records.

#### **4.4.4 WORK INSTRUCTIONS**

Work instructions for all activities lay down the step by step method of carrying out a task.

#### **4.4.5 FORMS/FORMATS/CHECK LISTS**

For recording the performance data of various tasks, forms/ formats are used. The forms/ formats depict the sequence of activities & allow for space to record observations of data



against every activity. Check lists are the documents which are designed to ensure (ii) timely actions in the performance of tasks and (2) necessary inputs from all concerned.

#### **4.4.6 RECORDS**

Records are the objective evidence showing that the established quality system has actually been in use and are effective. The records as mentioned in various clauses of the quality system are maintained by the concerned functional heads satisfying the requirements of “Record Control”.

## **5. LEADERSHIP**

### **5.1 LEADERSHIP AND COMMITMENT**

#### **5.1.1 GENERAL**

The management of the University is committed to develop and implement the quality management system. The management of the university is determined to continual improvement of the quality management system for its effectiveness. The commitment of the university management is manifested from the following:

- a) A quality policy of the University has been established, and exhibited at prominent places in the University to disseminate the intent of the quality policy and the commitment contained in it.
- b) The quality objectives and their means and measures have been established for various processes and functions at each level.
- c) The management of the University regularly communicate the importance of maintaining high quality of instructional process, satisfying the requirements of students, employing industry /organizations, and society through circulars, notices, meetings etc.
- d) Management reviews are conducted at planned intervals to ensure the continuing suitability, adequacy and effectiveness of the quality management system.

- e) The University management ensures the availability of resources as and when required for carrying out activities to maintain high quality.

### **5.1.2 CUSTOMER FOCUS**

The management follows all the applicable statutory and regulatory requirements consistently and ensures that the requirement of students are addressed. University management regularly through established mechanism checks the satisfaction level of the stakeholders and take appropriate action to enhance the satisfaction level of all the stakeholders.

## **5.2 POLICY**

### **5.2.1 QUALITY POLICY**

The quality policy of the University has been written in the English language and approved by BOM. The same is given below.

“The university is committed to achieving global standards of excellence in the field of Science, Technology, Management and allied areas by disseminating knowledge through cutting-edge research, education and innovation. We adopt best practices to maintain high standards in the core and allied functions through continuous evaluation and improvement of our processes.”

It is exhibited at prominent places in the University to for exposure to stake holders. All the employees of the University have been explained the meaning of and commitment to the quality policy. It has been ensured that all employees have clearly understood the policy with regard to its meaning, relevance and their commitment to it. The quality policy is reviewed at the time of management review for its continuing suitability.

## **5.3 ORGANIZATION ROLES, RESPONSIBILITIES AND AUTHORITIES**

The University management has ensured that the authority and responsibilities are defined and communicated within the organization. The Organizational Chart of the University is given in the Annexure-I

**(a) Visitor of the University**

The President of the Republic of India is the Visitor of the University. Any dispute arising between the University and any other University, established by Law in Delhi may be referred to the Visitor whose decision shall be final and binding on the parties.

**(b) Chancellor of the University**

The honourable Lieutenant Governor, Govt. of NCT of Delhi is the Chancellor of the University. The Chancellor, by virtue of his office shall be the Chairman of the Court.

### **5.3.1 AUTHORITIES OF THE UNIVERSITY**

**(A) The Board of Management**

- The Board of Management has the power of management and administration of the revenues and properties of the University and the conduct of all administrative affairs of the University not otherwise provided for.
- Subject to the provisions of the Act, the Statutes and the Ordinances, the Board of Management has, in addition to the other powers vested in it by and under the Statutes, have the following powers, namely :
  - a) to create teaching and other academic posts in the University and colleges and to define the functions and conditions of service of the Professor, Associate Professors, Assistant Professors, other teachers and the academic staff employed by the University after taking into consideration the recommendations of the Academic Council.
  - b) to prescribe qualifications and other conditions of eligibility for teachers and other academic staff after taking into account the recommendations of the Academic Council.
  - c) to make appointments of such Professors, Associate Professors, Assistant Professors, other teachers and such academic staff as may be necessary, on the recommendations of the selection committees constituted for the purpose.

- d) to make appointments to temporary vacancies of any academic and non-teaching staff.
- e) to specify the manner of appointments to temporary vacancies of the academic and non-teaching staff.
- f) to provide for the appointment of visiting professors, chaired professors and determine the terms and conditions of such appointment.
- g) to create administrative, ministerial, technical and other necessary posts after taking into account the recommendations of the Finance Committee and to specify the manner of appointment thereto.
- h) to prescribe qualifications and other conditions of eligibility for non-teaching staff.
- i) to make appointments of non-teaching staff as may be necessary, on the recommendations of the selection committees constituted for the purpose.
- j) to regulate and enforce discipline amongst the employees in accordance with the Statutes and the Ordinances.
- k) to transfer or accept transfers of any immovable or movable property on behalf of the University.
- l) to entertain, adjudicate upon or redress the grievances of the employees and the students of the University who may, for any reason feel aggrieved.
- m) to fix the remuneration payable to invigilators and travelling and other allowances payable after consulting the Finance Committee.
- n) to select a common seal for the University and to provide for the use of such seal.
- o) to delegate any of its powers to the Vice-Chancellor, and on the recommendations of the Vice-Chancellor to the Pro Vice-Chancellors, Registrars, the Controller of Finance or any other Officer, employee or authority of the University or to a Committee appointed by it.
- p) to institute fellowships, scholarships, studentships.
- q) to exercise such other powers and perform such other functions as may be conferred or imposed by the Act or the Statutes.

The Board of Management exercises all the powers of the University not otherwise provided for by the Act, the Statutes, the Ordinances and the Regulations for the fulfilment of the objects of the University. The Board of Management shall meet at least once, in every three months.

**(B) The Academic Council**

The academic council shall:

- a) exercise general supervision over the academic policies of the University and to give directions regarding methods of instruction, evaluation or research or improvement in academic standards;
- b) consider matters of general academic interest either on its own initiative or on a reference from the Planning Board or a Department/School of studies or the Board of Management and to take appropriate action thereon; and
- c) Frame such regulations as are consistent with the Statutes and the Ordinances regarding the academic functioning of the University, including discipline, admissions, award of fellowships and studentships, fees and other academic requirements.
- d) The academic council shall meet at least once, in every four months.
- e) The academic council shall draw up a list of experts/professionals to be members of selection committees constituted under Clause 16(2) and 16(3). Such a list of experts/professionals shall be submitted to the Government, through Secretary, Department of Training & Technical Education and as may be required by the Government, experts/professionals would be dropped/ substituted in the list drawn up by the academic council.

**(C) The Planning Board**

- a) The Planning Board shall consist of the Vice-Chancellor and not more than six members to be nominated by the Board of Management.
- b) All the members of the Planning Board, other than the Vice-Chancellor, shall hold office for a term of three years.
- c) The Planning Board shall design and formulate appropriate plans for development and expansion of the University, and it shall, in addition, have the right to advise the Board of Management and the Academic Council on any matter which it may deem necessary for the fulfilment of the objects of the University.
- d) The Planning Board may constitute such committees as may be necessary for planning and monitoring the programmes of the University.

- e) The Planning Board shall meet at such intervals as it deem expedient, but it shall meet at least twice in a year.

**(D) The Finance Committee**

- a) The Finance Committee shall develop financial policies of the University and to oversee the revenues and expenditures of the University.
- b) The Finance Committee shall make recommendations on generating revenues through the University's activities and these recommendations of the Finance Committee shall be placed before the Board of Management for a decision.
- c) The Finance Committee shall make recommendations on improving the operational efficiency of the University's activities, measures for revenue generation, and on major expenditure proposals of the University, as may be required by the Board of Management.
- d) The Controller of Finance shall be the ex-officio Member-Secretary of the Finance Committee.
- e) The annual accounts and the budget of the University prepared by the Controller of Finance shall be placed before the Finance Committee for approval before being submitted to the Board of Management.

**5.3.2 OFFICERS OF THE UNIVERSITY AND THEIR RESPONSIBILITY**

The authority, responsibility and interrelationship of personnel/bodies managing, performing and verifying all activities affecting quality of instruction, evaluation and other aspects of functioning of the University have been defined in the Delhi Technological University Act, 2009 (Delhi Act 6 of 2009), Statutes, Ordinances and Administrative Orders.

The responsibilities of some of the key personnel managing the QMS are listed below:

**(a) Vice-Chancellor**

- The Vice-Chancellor is ex-officio Chairman of the Board of Management, the Academic Council, the Planning Board and the Finance Committee.

- Vice-Chancellor ensures that the Act, the Statutes, the Ordinances and the Regulations are duly observed and he has all the powers necessary to ensure such observance.
- The Vice-Chancellor exercises control over the affairs of the University and shall give effect to the decisions of all the authorities of the University.
- The Vice-Chancellor has all the powers necessary for the proper maintenance of discipline in the University and he may delegate any such power to such officer or officers as he may deem fit.
- The Vice-Chancellor is empowered to grant leave to any officer of the University and make necessary arrangements for the discharge of the functions of such officer during his absence.
- The Vice-Chancellor has the power to convene or cause to be convened the meeting of the Court, with the approval of the Chancellor, and the meetings of the Board of Management, the Academic Council, the Planning Board and the Finance Committee.
- The Vice-Chancellor has the power to make short-term appointments, with the approval of the Board of Management, for a period not exceeding six months, of such persons as he may consider necessary for the functioning of the University.

**(b) Pro-Vice Chancellors**

- Pro Vice-Chancellor assist the Vice-Chancellor in respect of such matters as may be specified by the Vice-Chancellor in this behalf from time to time and also exercise such powers and perform such functions as may be delegated to them by the Vice-Chancellor.
- Vice Chancellor is assisted by two Pro-Vice Chancellors who supports him in all affairs related to Academic, Research, Faculty, Students and Administration. The distribution of work of Pro-Vice Chancellors are given below in table1.

**Table 1: Work allocation of Pro Vice-Chancellors**

<b>Pro-VC-I</b>	<b>Pro-VC-II</b>
<ul style="list-style-type: none"> <li>• Examination branch through COE</li> <li>• Student Discipline through Board of Discipline</li> </ul>	<ul style="list-style-type: none"> <li>• East Campus of DTU</li> <li>• Internationalization of DTU and admission of foreign students through Dean (IA)</li> </ul>

<ul style="list-style-type: none"> <li>• Hostels through Chief Warden</li> <li>• University student’s internship program</li> <li>• Library through Librarian</li> <li>• Mew Academic initiatives in the Engineering Discipline</li> <li>• NBA and AICTE</li> <li>• Training &amp; Placement</li> <li>• Medals &amp; Scholarships</li> <li>• House Allotment</li> <li>• Stores &amp; Purchase and General Administration branches through Registrar</li> <li>• Health Centre and Security</li> <li>• Any other work assigned from time to time by the Vice Chancellor</li> </ul>	<ul style="list-style-type: none"> <li>• Service matters of teaching and non-teaching staff through Registrar</li> <li>• Technology business incubation centre and Entrepreneurship cell</li> <li>• Alumni Affairs through Dean (AA)</li> <li>• New Academic initiatives related to Management and allied areas</li> <li>• Continuing education program through Dean (CE)</li> <li>• Skill development and Training Program</li> <li>• NAAC and UGC</li> <li>• Donation and contribution Fund</li> <li>• Any other work assigned from time to time by the Vice Chancellor</li> </ul>
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**(c) Registrar**

- Registrar has the power to take disciplinary action against such of the employees, excluding teachers, as may be specified by the Board of Management by general or special order made in this behalf.
- In cases where an inquiry discloses that a punishment beyond the powers of the Registrar is called for, the Registrar consequent to the inquiry, makes a report to the Vice-Chancellor along with his recommendations for such action as the Vice-Chancellor may deem fit, provided that in such a case an appeal shall lie to the Board of Management against an order of the Vice-Chancellor imposing any penalty on an employee.



- The Board of Management designates a Registrar to act in one or more of the following capacities:
  - i. Secretary to the Court.
  - ii. Secretary to the Board of Management
  - iii. Secretary to the Academic Council.
  - iv. Secretary to the Planning Board.
- Registrar is in relation to the authority concerned-
  - i. is the custodian of the records, the common seal and such other properties of the University as the Board of Management may commit to his charge;
  - ii. issues notices and convene meetings of that authority and the committees appointed by it;
  - iii. keeps the minutes of the meetings of that authority and the committees appointed by it;
  - iv. conducts the official proceedings and correspondence; and
  - v. Supplies to the Chancellor a copy each of the agenda of the meetings of the authorities of the University as soon as it is issued and the minutes of such meetings.
- Registrar may be designated by the Vice-Chancellor to represent the University in suits or proceedings, by or against the University, sign powers of attorney, verify pleadings and depute his representative for the purpose.
- Registrar holds and manage the properties of the University, including trust and immovable properties, for fulfilling any of the objects of the University.
- Registrar ensures that the registers of properties of the University are maintained properly and that stock checking is conducted of the equipment and other material in the offices and branches of the University including colleges and the institutions maintained by the University.
- Registrar performs such other functions as may be specified in the Statutes, Ordinances or Regulations or as may be required from time to time by the Board of Management or the Vice-Chancellor.

**(d) Controller of Finance**

- The Controller of Finance exercises general supervision over the funds of the University and advise it as regards its financial policies and perform such other financial functions as may be assigned to him/her by the Board of Management or as may be prescribed by the Statutes or the Ordinances, provided that the Controller of Finance shall not incur any expenditure exceeding three lakh rupees or such other amount as may be fixed by the Board of Management, without the prior approval of the Competent Authority.
- Subject to the control of the Vice-Chancellor and the Board of Management, the Controller of Finance –
  - a) ensures compliance of financial rules and regulations as prescribed by the University;
  - b) is responsible for proper and timely investment of university funds with the approval of the Vice-Chancellor;
  - c) is responsible to get formats of books of accounts approved by the finance committee;
  - d) is responsible for getting internal and external audit of the books of accounts of the university;
  - e) sees that the limits fixed by the Finance Committee for recurring and non-recurring expenditure for a year are not exceeded and the money is expended or spent for the purposes for which it was granted or allotted;
  - f) is responsible for the preparation of the annual accounts and the budget of the University and for their presentation to the Board of Management after they have been considered by the Finance Committee;
  - g) keeps a constant watch on the cash and bank balances and investments;
  - h) watches the progress of collection of revenues and advise on the methods of collection employed;
  - i) brings to the notice of the Vice-Chancellor any unauthorized expenditure or any other financial irregularity and suggest appropriate action against person at fault; and calls from any office of the University, including colleges maintained by the

University, any information or report that he/ she may consider necessary for the performance of his functions.

Any receipt given by the Controller of Finance or by the person or persons duly authorized in this behalf by the Board of Management shall be sufficient discharge for payment of moneys to the University.

#### **(e) Controller of Examinations**

##### **Pre-Examination work:**

- Course Registration by the students
- Handling requests by the students for course/subject change
- Preparation of schedule/date-sheet of Examinations for Mid Semester, End Semester, Supplementary/Makeup Examination
- Appointment of Paper-setters, Examiners, Tabulators, Moderators and Scrutinizers for all the examinations
- Appointment of Center Superintendent and Coordinator of Central Evaluation, Fixing of venue of Central Evaluation Center
- Making arrangement for advances to the University Departments for conduct of various exams
- Receive Question Papers from Paper Setters

##### **Conduct of Examination**

- Arrangement for Vigilance Squads for visiting centers/halls
- Visit various examinations centers/halls
- Arrangement for collecting the answer books from the various examinations centers/halls

- Receive the report of the unfair means cases reported by the Superintendent from the examination centers/halls

#### **Post Examination work**

- Carry out the work of assessment of answer books by the examiners in Central Evaluation Centre and collect the award sheets submitted by them there itself for onward transmission to Result Section
- Receive the Practical/Project examinations Award sheet from the concerned department
- Feed the awards/grades into the Results Processing System
- Generate tabulations sheets and get verified by the tabulators
- Generate moderation sheets and moderate the results as recommended by the committee
- Declare the results of various examinations and uploading on University Website
- Make the arrangement for distribution of degrees
- Make arrangement of the answer books received from the Central Evaluation center and preserve the record of examination
- Deal with the cases of Unfair means, lapses on the part of the students
- Generate and print mark sheets of declared results and handover to the respective sections.
- Issue Duplicate mark sheet required if any
- Prepare and declare consolidate result of the candidates who fulfill the requirements for the award of degree
- Print and generate consolidated mark sheets
- Print degree, scroll, etc. for convocation
- Process bill related to examination activities

- Verification of Mark sheets/Degrees
- Provide data related to Examinations requested by various stakeholders

**(f) Deans**

The Deans are the head of the functional cluster assigned to them and are responsible for the conduct and maintenance of the standards of work in the functions assigned to them. The Deans perform such other functions as may be prescribed by the Ordinances. The Deans have the right to be present and to speak at any meeting of the Board of Studies or a committee of the Department/School but shall not have the right to vote thereat unless he is a member thereof.

**DEAN (ACADEMIC UG)**

- a) Admission of students at UG level
- b) Design and Development of Instructional Process
- c) Framing and revising rules and regulations pertaining to academics through Academic Council
- d) Preparation & distribution of academic Calendar and central time table
- e) Registration of students at the beginning of each semester
- f) Decisions regarding offering of backlog courses
- g) Approval of examiners for various examinations at undergraduate and post-graduate levels
- h) Granting semester leave on genuine grounds to the students as per University rules and regulations
- i) Granting extensions etc. in the time period for submission of Seminar, and/or Thesis of Master of Engineering as per University rules and regulations.

**DEAN (ACADEMIC PG)**

- a) Admission of students at PG level
- b) Admission, progress monitoring and evaluation of Ph.D. candidates.
- c) Design and Development of Instructional Process

- d) Framing and revising rules and regulations pertaining to academics through Academic Council
- e) Preparation & distribution of academic Calendar and central time table
- f) Registration of students at the beginning of each semester
- g) Decisions regarding offering of backlog courses
- h) Approval of examiners for various examinations at undergraduate and post-graduate levels
- i) Granting semester leave on genuine grounds to the students as per University rules and regulations
- j) Granting extensions etc. in the time period for submission of Seminar, and/or Thesis of Master of Engineering as per University rules and regulations

**DEAN (IRD)**

- a) Promotion of Research Activities in the University.
- b) Promotion of consultancy in the University
- c) Initiating, submission and follow-up of project proposals to sponsoring agencies and timely completion of the sponsored projects.
- d) Protection of IP created in the University and commercialization

**DEAN (STUDENTS WELFARE)**

- a) Welfare of students in the University, their conduct, discipline, seriousness to studies, health, scholarships, fee concessions etc.
- b) NSS programmes and financial support to NSS activities
- c) Elections for the posts of DTU Student Association
- d) Formation of and financial assistance to Cultural, Technical and Sports councils
- e) Financial assistance to students for travel grant for presenting research paper/ poster in National/ International Conference
- f) Financial assistance to Innovation Teams

- g) Financial assistance to students for participation in sports, literary, technical and cultural activities
- h) Industrial visits of academic departments

#### **DEAN (INTERNATIONAL AFFAIRS)**

- a) Admission of the foreign national students
  - Direct mode
  - Through ICCR
  - Through DASA
- b) Mobility of faculty for promotion and branding
- c) Signing of MoUs with International Institutions
- d) Facilitation to students and recommendation of internship in abroad.
- e) Enhancing international research and academic collaboration, faculty and student exchange programs, establishing networking with reputed institutions
- f) creating opportunity for our own faculty and students through creation of meaningful MoUs, admission of foreign students and establishing brand DTU globally to name a few
- g) Promotion of relationship between Foreign Universities/Institution through signing of Memoranda of Understanding (MoUs) related to Faculty and student exchange programme and providing an opportunities to the foreign national students for study in DTU under UG/PG and Ph.D programmes.

#### **DEAN (OUTREACH and EXTENSION ACTIVITIES)**

- a) Provides leadership for the organization, content, and effectiveness of Extension and outreach programs in the University.
- b) Represents University to external stakeholders and to Extension/outreach partners.
- c) Encourages and supports development of new outreach programme that addresses emerging issues and opportunities.

- d) Encourage innovation and excellence in Extension/outreach programme of the University.
- e) Perform university and community service as appropriate.

#### **DEAN (CONTINUING EDUCATION)**

- f) Overall planning, direction, organization, and implementation of the educational programs of adult and continuing education.
- g) Faculty development programme, Short-term training programme, Seminar, workshop, conference, symposium etc.

#### **DEPARTMENT HEADS**

- a) Preparation of teaching load (Assigning courses to various faculty members and laboratory instructional work to technical staff)
- b) Ensuring that the Instructional delivery process is carried out as per schedule
- c) Initiating the instructional design, development/modification process through Board of Studies (BOS) as and when the need arises
- d) Collecting feedback from students and industry to serve as input for instructional design, development and modification
- e) Purchase of machinery, equipment, software & instructional material as required
- f) Maintaining records like
  - Initiation of Instructional design
  - Course files
  - Students' complaints and their redressal
  - Admission of M.E. and Ph.D. students
  - Ongoing research projects in the department
  - Ongoing consultancy work in the department



- g) Placement, monitoring & evaluation of students for Project Semester.
- h) Upkeep and maintenance of machinery and equipment in Department.
- i) Ensuring continuous upgradation of machinery, equipment, facilities, instructional aids etc. in the department by mobilizing funds
- j) Promotion of Research & Consultancy in the department
- k) Organisation of continuing education programs, sponsored/in-house short-term courses, workshops, seminars, conferences, symposia, winter/summer schools
- l) Interaction with the students, providing them the required guidance & counselling
- m) Monitoring and functioning of technical societies in the department
- n) Annual physical verification of assets and recommendations for write off
- o) Conduct the meetings of the following committees regularly
  - Board of Studies
  - Faculty meetings
  - Departmental Purchase Committee
- p) Ensure timely utilization of various grants
- q) Ensure adjustment of maximum backlog courses of students in consultation with Dean academic (UG/PG)

### **HEAD OF CENTRES**

- a) Efficient functioning and prompt discharge of the responsibilities assigned to the centre as per their documented system
- b) Effecting pro-active & reactive improvement in the centre
- c) Maintenance of documents, records and physical infrastructure
- d) Active participation in continuing education programmes

The activities of each Centre differ widely depending upon their role and responsibilities.

### **HEAD, CENTRAL WORKSHOP**

- a) Imparting basic technical knowledge and developing requisite skills in various manufacturing processes e.g. carpentry, electro-plating, forging, machining, metal casting, sheet metal work, tin smithy and welding etc.
- b) Providing on-the-job training covering practical, managerial and commercial aspects of manufacturing to the students
- c) Assisting and guiding in the manufacture of experimental rigs and set-ups for postgraduate students and research scholars
- d) Modernization and up gradation of infrastructural facilities
- e) Conducting special training programmes for in-service technical personnel

#### **HEAD, DEPARTMENT OF TRAINING AND PLACEMENT (T&P)**

- a) Organising Campus placement of students
- b) Promoting Industry-University-Interaction
- c) Assisting the departments in the placement of students in public/private sector undertaking for project semester and summer term training, if required
- d) Collecting feed-back from Industry about performance of students employed and transmitting the same appropriately for reactive corrections
- e) Collecting information regarding offering of various continuing education programmes, sponsored/ in-house short term courses, winter/ summer schools, workshops etc. and transmitting the same to industries/ institutions/ users through brochures.

#### **CEO, DTU INCUBATION AND INNOVATION FOUNDATION**

- a) Promote start-ups by creating incubation infrastructure, friendly policy for start-up funding, use of start-up products in govt. sector, start-up spaces and marketing support programs for start-up
- b) Changes to current curricula with the aim of developing entrepreneurship in students- “catch them young”
- c) Include entrepreneurship as a subject/ add-on course/ elective in Institutions

- d) Conduct entrepreneurship boot camps during summer to encourage students participate in entrepreneurial activities
- e) Offer start-up founders the option to participate in placement in the year after graduation to increase risk-taking ability
- f) Offer incentives to faculty for risk-taking and start-up incubation/commercialization of technology
- g) Conduct Boot Camps for start-ups, Business Plan competition etc. where the winners get a chance to utilize the incubation centres being set-up
- h) Create entrepreneurship challenges based upon existing problems to foster Innovation
- i) Develop a mentorship body to provide support to entrepreneurs; partner with ecosystem players as possible
- j) Create entrepreneurship clubs amongst the student community.

#### **LIBRARIAN**

- a) Acquisition, stocking and display of books, journals, back volumes, national/international standards, CD-ROM, databases, audio and video cassettes, search packages etc.
- b) Cataloguing the acquired library material
- c) Ensuring smooth access, issue and return of library material as per documented procedures
- d) Providing reprographic facility for reference material
- e) Maintenance of library equipment and material
- f) Annual physical stock verification of library material
- g) Inter library networking for library and information services to users

#### **HEAD, COMPUTER CENTER**

- a) Ensuring the availability of computing facilities as and when required by the users
- b) Continuous modernization and upgradation of the facilities

- c) Ensuring the physical infrastructure to be in good working condition/order through preventive and corrective maintenance
- d) Repair and maintenance of instruments/equipment in University laboratories
- e) Design and fabrication of teaching aids/instruments and equipment for research work
- f) Extending services for purchase and installation of instruments/equipment by Departments
- g) Organizing training programmes on design, use, fabrication and maintenance of instruments/ equipment
- h) Offering consultancy and services to outside organizations
- i) Ensuring internet and e-mail service to users of University
- j) Ensuring proper working of University Website
- k) Implementation, maintenance and upgradation of ERP at University level
- l) Liaisoning with different units for their Software need
- m) Build understanding with IT companies for the benefit of students and faculty of University
- n) To maintain a good level of infrastructure for students, faculty and research scholars
- o) To coordinate with internet service providers for the delivery of best internet and other services

#### **INCHARGE, HEALTH CENTRE**

- a) Providing preliminary medical services to the University community and if need be to refer them to the specialists
- b) Training the campus community for healthy living as well as extending preliminary medical aid in times of emergency
- c) Participating in special health drives for prevention/ eradication of various diseases.

**DIRECTOR IQAC**

- a) Preparation and control of quality system documents
- b) Organizing training in quality system, ensuring that the employees understand the quality policy, objectives and working of the installed quality system.
- c) Planning and implementation of internal quality audits.
- d) Maintaining the quality system & reporting on its functioning; implementation of all corrective and preventive actions
- e) Liaison with the external agencies/bodies on matters related to quality system.
- f) Arranging for Management Reviews.
- g) Maintenance of Records of the operative Quality System and its constituent documents.
- h) Holding Management Review Meetings and updating the Quality System.
- i) Coordination all Quality initiatives such as NAAC, NBA, QS ranking etc. on behalf of the University.
- j) Feedback collection from students and other stakeholders and its analysis.

**MANAGEMENT REPRESENTATIVE (M.R.)**

The Vice Chancellor vide his Office Order no. DTU/Reg/OO/2016-17/2459 dated 28<sup>th</sup> September 2017, has appointed Management Representative (MR) who over and above his responsibilities has been assigned the responsibility and authority for:

- k) Establishing, implementing and maintaining a quality system in accordance with ISO9001:2015 requirements and coordinating different functions and activities within the University in the said regard.
- l) Reporting the performance of the quality system to the University management for periodic review & improvement.
- m) Ensuring the promotion of awareness of students and employing industry's requirements throughout the University.

- n) Liaison with external agencies on matters relating to the quality of Instructional System at DTU.

## **6 PLANNING**

### **6.3 ACTIONS TO ADDRESS RISKS AND OPPORTUNITIES**

University has mechanism in place to address the risk in all the processes important for achieving the set objectives. This includes identifying the risk, eliminating the risk, converting a possible risk into opportunity and retaining it by informed decision. Each department has identified the risk and documented it in its SOP along with actions needed to address the risk.

The University sees the changing customer requirement as an opportunity to adopt new practices, launching new courses, collaborating with new organization/ institutions, using latest technologies, opening new centres. This strengthen the university and also satisfy the customer's needs. University management is committed to address the opportunities arising from any source to achieve improvement, enhance output to assure the intended results from the Quality management system in place.

### **6.4 QUALITY OBJECTIVES AND PLANNING TO ACHIEVE THEM**

University has well documented Quality objectives as listed below.

- To produce highly skilled, analytic and proficient technocrats, and management professionals.
- To develop a new knowledge base for research and innovation.
- To develop academia-industry relations to fulfil the technological need of mankind for current and future perspective.
- To develop human potential with analytic ability, ethics, social values, and integrity.
- To assess and provide environment-friendly reasonable and sustainable technology for local and global needs.
- To act as a facilitator for incubation, product development, transfer of technologies and entrepreneurship.

- To develop and inculcate knowledge, skills and right attitude with responsibility, commitment, professionalism, moral & ethical standards amongst everyone in the campus.
- To establish centres of excellence in emerging areas of science, engineering, technology, management and allied areas.

The university Management has ensured that the quality objectives are established at various levels and departments of the university. These objectives are measurable and consistent with quality policy of the university. The quality objectives of the University as well as the indicators/procedures of their measurement and monitoring are given below in table 2.

**Table 2: Organizational quality Objectives with means and measures**

<b>S. N.</b>	<b>Quality Objectives</b>	<b>Means to achieve Objectives</b>	<b>Measurement Criterion/ Indicators</b>
1.	To produce highly skilled, analytic and proficient technocrats, and management professionals.	Updated Syllabus, Innovative Teaching, State-of-art Laboratory, Equipment, Software, Experts Lectures, Project based Learning, Internship	Academic performance, Placement record, Recruiter’s/industry feedback
2.	To develop a new knowledge base for research and innovation.	State-of-art Research Facilities, Highly augmented Library and enriched e-resources, Research Grant, Recognition & Award by University, Innovation & Incubation Center, IP Protection	Number of research paper published in International Journals and Conferences of high repute, Number of books published, Number of patent filed, New start-ups, sponsored projects
3.	To develop academia-industry relations to fulfil	MoU with industry/ Organizations and Academic institutions of National/ International Importance,	Number of MOUs, Industry visits by faculty & students, companies visited for

	the technological need of mankind for current and future perspective.	Industrial Visits/ Training, Workshops by Industry Experts, Technical Festival organized by University, Technical Societies, Industry representation in BOS, AC and BOM.	training and placement, Consultancies to the industry/organizations, visits by Industry Experts to University
4.	To develop human potential with analytic ability, ethics, social values, and integrity.	Centre for Human values, Cultural festival, Technical festival, Sports meet, Literary festival, Student Societies, Yoga and meditation camps, Motivational Lectures by renowned persons, Humanity oriented curriculum, NSS, Blood donation camps	Number of programmes organized by students/faculty for society
5.	To assess and provide environment-friendly reasonable and sustainable technology for local and global needs.	Development of Solar Systems, Dedicated department for study of environmental study and research, water treatment plant, solid waste management, Bio-energy plants, food waste to energy plant, Environmental testing services to various departments, Society of alternate transportation.	Air quality index, Quantity of alternate/Bio fuel produced, Solar Power generated, Amount of waste recycled, number of consultancy provided by Environment department.
6.	To act as a facilitator for incubation, product development, transfer of technologies and entrepreneurship.	DTU Innovation & Incubation Foundation, IPR Cell, Research on new product development, MOU with Industry, Centre for Entrepreneurship.	New start-ups, Number of patent filed, Number of MOU with Industry, programmes organized by E-Cell



7.	To develop and inculcate knowledge, skills and right attitude with responsibility, commitment, professionalism, moral & ethical standards amongst everyone in the campus.	Development of skill centers, Guest Lectures and workshops on Ethics and professionalism, Dedicated courses related to Ethics and professionalism run by Department of Humanities, DTU. Software to check and discourage plagiarism in research content writing, Ethics Committee.	Amount of fund invested in incubation and skill centers, Participations in Ethics and professionalism lectures and workshops, Number of plagiarism cases reported.
8.	To establish centres of excellence in emerging areas of science, engineering, technology, management and allied areas.	Centre of Excellence, generating resources/funds from the University/ Govt./ Industry, Sponsored Projects, Research Grants, Providing Expertize for identification and feasibility study of emerging and future area of science, engineering, technology, management and allied areas.	Number of center of excellence, Output/ Developments in existing center of excellence, Number of research paper published and patent filed in emerging areas

## 6.5 PLANNING OF CHANGES

The University management has ensured that

- i. The effective planning of the Quality Management System (QMS) is carried out to meet the requirements of the standard pertaining to identification of processes, their sequence and interaction, determining effective criteria for operation and control, ensuring resource availability, monitoring, measuring and analysis of data, implementing actions and continual improvement of the system.

- ii. The changes, wherever these are made to the Quality Management System (QMS) are as per a documented procedure, which ensures that the integrity of the QMS is maintained.

## **7. SUPPORT**

### **7.1 RESOURCES**

#### **7.1.1 GENERAL**

The University estimates the resources needed for the implementation, management, and continual improvement of Quality Management System and its activities to meet the stakeholders and customers satisfaction. As an internal mechanism for sustenance, assurance and enhancement of the quality culture of education, the University has established the Internal Quality Assurance Cell (IQAC) for maintaining the momentum of quality consciousness. IQAC, in fact, is conceived as a mechanism to build and ensure a quality culture at the University level to meet the diverse needs of the stakeholders. The IQAC is meant for planning, guiding and monitoring Quality Assurance and Quality Enhancement activities of the University. The IQAC, in coordination with other departments and administration of the university, helps in planning, management review, human resource development, infrastructure development, financial resources etc for each programme, depending upon the number of registered students and the detailed curriculum, the requirements of human and physical resources. The VC and the concerned heads are responsible for provision of needed resources to ensure smooth functioning of each programme. Resources needed for internal quality audits are also ensured by the VC as per need projected by IQAC.

#### **7.1.2 PEOPLE**

- It has been ensured by the organization that employees including the faculties and staff are competent enough to perform work with quality on the basis of appropriate education, training, skills and experience.
- The university is determined for the development of necessary competence of personnel performing work for every position in teaching and non-teaching categories. The qualifications and experience required as eligibility condition for various positions are

established as per the regulatory and funding agencies like UGC, AICTE, Government of NCR Delhi and others.

- Where applicable, training is provided to various categories of employees to achieve the necessary competence in the activities being performed by them. Training needs are determined from time to time based on employees' job rotation, career progression, and change in technology, systems or structure in the university. The university organizes various training program, faculty development program, short term programs, and conferences for the employees and also provides financial assistance to the employees for these activities in other premier institutes. The university has provided personality development funds to the faculties to upgrade their offices meeting world class standards. The university also encourages the research and development activities by providing financial resources and facilities to the faculties, and research scholars.
- After provision of training, feedback on its effectiveness is taken from the participants, resource persons and from the supervisors of the participants. Through the analysis of this feedback, the effectiveness of the actions taken is accessed which serve as a basis for the future actions to be taken.
- The university ensures the quality awareness and consciousness of each person through training programmes, circulars, notices, quality policy, work instructions and meetings. The emphasis is given on that all employees understand the relevance and importance of their activities, and contribute to the achievement of the quality objectives.
- Records of education, training, skills and experience are maintained and updated from time to time by various departments in the university.

### **7.1.3 INFRASTRUCTURE**

The University determines the requirements for infrastructure, provides it and is maintaining and upgrading it from time to time. Focus is on meeting the requirements of instructional process so that quality of instructional design and delivery and in turn professional development of the students is achieved. The registrar, chief project officer, estate officer, executive engineer, and supporting staff is responsible for planning, developing, and maintaining the infrastructure of the university.

The infrastructure provided in the University includes:

- i. Buildings include administrative building, departments, centres, classrooms, laboratories, library, computer centre, offices, hostels, workshops, guesthouse, auditorium, play grounds, indoor and outdoor sports facilities and others.
- ii. Equipment and software in the laboratory, books and other referral material in the library, furniture and fixtures in offices, classrooms, hostels etc.
- iii. Support services such as communication or information systems like telephone, fax, internet (e-mail); public bank, health centre, gymnasium and transport services like university buses, cars etc.

#### **7.1.4 ENVIRONMENT FOR THE OPERATION OF PROCESSES**

The university determines the work environment and manages it to fulfil the requirements of performance of various activities in order to achieve quality of instructional process of current and passed out students. This includes both the physical working conditions like lighting, noise, temperature etc in class rooms, laboratories, workshops, computer centres and other places as well as the human relations and working environment. Deans, and respective head of departments are responsible for managing and maintaining the necessary physical, psychological, and environmental factors to achieve the quality objectives. It is the responsibility of the vice chancellor to arrange the necessary resources required for implementing and achieving the quality objectives of the university.

#### **7.1.5 MONITORING AND MEASURING RESOURCES**

University has sufficient resources to monitor and measure the products and services of the University. These resources are maintained regularly and calibrated to ensure their continuing fitness for the purpose of monitoring and measurement. University also maintains the documented information as evidence of fitness for the purpose of monitoring and measurement resources. University also takes appropriate action to replace or repair the resources so that measuring equipment remain fit and work as desired. Measuring equipment is used as per standard procedures to safeguard it from damage, adjustments and deterioration.

### **7.1.6 ORGANIZATIONAL KNOWLEDGE**

University has in place mechanism and resources to document the organizational knowledge created over the years to achieve the objectives of the university and conformity of its product and services. The organizational knowledge is available on public platforms also for use by its stakeholders. All the intellectual property created in various forms, content created, documented reports are kept safe, secure and accessible. The knowledge gained through various means are being updated regularly.

## **7.2 COMPETENCE**

The persons with necessary competence are recruited in the university based upon stringent recruitment rules approved by the competent authority through a well-documented and approved process. The record of all such recruitment is maintained as evidence. The performance of the employees is assessed regularly and documented information of evaluation is maintained. The employees are regularly provided trainings and supported by continuous learning process for getting appropriate education, skill and competence to achieve more effectiveness in their working and meeting the objectives of the university. University also hires the persons with required competence to support many new processes and initiatives.

## **7.3 AWARENESS**

University has published the Quality Policy on the website and at all the prominent locations to make people aware about it. The Quality Objectives are displayed in respective departments. Training programs are organized to make people aware about benefits of the improved performance due to QMS implementation and their contribution to make QMS effective. The implication of not conforming to QMS requirements is also shared with people on various platforms.

## 7.4 COMMUNICATION

University adopts open door policy of communication at all functional levels. Top management has ensured that appropriate communication processes are established within the University and that communication takes place regarding the effectiveness of the quality management system. This includes telephone availability to all employees, Internet facility with email ID of all teachers and offices, circulars, officer orders, notices, meetings & reviews.

## 7.5 DOCUMENTED INFORMATION

### 7.5.1 GENERAL

Documents required by the quality management system are controlled in the organization as per the established documented procedure. The scope of the documents includes:

- I. Data input & output.
- II. Quality Manual.
- III. Procedural Manuals including Work Instructions and forms, formats etc.
- IV. Regulatory requirements and documents of external origin.
- V. Applicable Standards and Specifications.

### 7.5.2 CREATING AND UPDATING

The approval of documents is required prior to use. The responsibility to control various documents has been assigned as under:

- All documents are approved with information to the MR with an aim to maintain uniformity in the whole organization.
- Quality Policy and Quality manual are reviewed by MR and approved by the Vice Chancellor.
- Documents pertaining to a specific area controlled by the functional head of that area.
- Registrar controls documents of External origin.

The detailed are specified in the documented procedure for Control of Documents.

The procedure for control of documents addresses as the following requirements of the standards.

- I. Stipulating uniform document coding/ numbering system and to ensure correct identification, access, reference, withdrawal and updating of documents.
- II. Establishing master list, identifying the current/ revision status of documents.
- III. Ensuring ready availability of the latest versions of the document at the identified use points through a circulation list and withdrawals and issue procedure.
- IV. Prescribing a standard procedure for removal and disposal of invalid/ obsolete documents as well as identification for retention of any of the obsolete/ redundant documents for further reference/ requirement.
- V. Release of revised documents to authorized holders as per change control procedures.
- VI. Reviewing and updating documents as necessary and re-approving.
- VII. Changes to the document/ data are to be reviewed by the same functionary/ organization that framed and proved the original documents. The obsolete documents are withdrawn and the revised/ changed document /data provided to all authorized holders updating the master list. The background information upon which the document is changed is maintained. The nature of changes is shown in the document or on the amendment record sheet.
- VIII. Identification of documents of external origin for the planning and operation of the Quality Management System and control of their distribution.
- IX. The obsolete documents are prevented from unintended use by removing them from the point of use.

### **7.5.3 CONTROL OF DOCUMENTED INFORMATION**

A documented procedure for control of documents has been established by each department/ branch/ centre to ensure that records are maintained and are accessible, whenever required for effective operation of quality management system. All quality records are maintained by respective functional Heads as defined in laid down procedures and the same are to be controlled, updated and made available by them. The documented procedure includes:

- a) Identification, collection, indexing, access, filing, storage, maintenance and disposal of quality records after the expiry of specified retention period.
- b) It is to be ensured that quality records are legible and are stored in such a way that they are easily retrievable, and that there is no damage, deterioration or loss to the records in storage.
- c) Retention time of quality records has been established and recorded in prescribed format.

## **8. OPERATION**

### **8.1 OPERATION PLANNING AND CONTROL**

The University has planned and developed the processes needed for transformation of entering students to engineers, managers, entrepreneurs, and professionals. Deans, and respective head of departments are responsible for the implementation and continuation of quality planning as per standards for product realization established by the university. It is consistent with the requirements of other processes of quality management system like management responsibility, resource management and measurement and analysis including administrative, liaison and supporting activities. The quality planning activity ensures that the product quality is assured throughout the process by identifying, planning, performing and verifying activities affecting quality. Quality planning includes determining the quality objectives and requirements for the product and covers the following:

- (a) Defining, monitoring, and updating of quality objectives and requirements of product or service for meeting these objectives.
- (b) Laying down a scheme to control the instructional process for evaluation of students at various stages.
- (c) Specifying the performance criteria and verification of the processes for successful completion of the process culminating into award of degree/certificate.
- (d) Objective evidence shown through records for the conformity of these processes and their resulting products.



- (e) Planning of state-of-art instructional processes to meet the defined objectives. The requirements of customers may be achieved through the quality procedures, work instructions with matching evaluation and management system to meet quality objectives and process requirements. matching the instructional design and development with the requirements of the customers i.e. students, industry and society at large. matching the resources of good quality operational equipment in the laboratories and availability of other facilities like teaching aids relevant to the instructional design.

## **8.2 REQUIREMENTS OF PRODUCTS AND SERVICES**

### **8.2.1 CUSTOMER COMMUNICATION**

The University has determined and implemented effective arrangements for communicating with students. The arrangements include information brochure which contains information about all programmes, eligibility criteria, fees and other such details. For feedback including complaints and their redressal, personal visit, telephone and messaging, e-mail, web-portal, post facility is provided and responsibilities are well defined. The university also has dedicated cell for women/differently abled for addressing their issues. The progress/performance including any disciplinary action or attendance shortage is communicated to the parents/guardians of the students. The university has online mobile app-based attendance system which enables students to review their attendance regularly. Board of discipline takes all necessary decisions regarding disciplinary activities. The following records of customer related processes are maintained for stipulated time:

- (i) Brochure
- (ii) Applications of candidates
- (iii) Admission and Registration records
- (iv) MOUs on Consultancy/Test services
- (v) Feed backs
- (vi) Answer sheets and project reports
- (vii) PG/PhD dissertations
- (viii) Training and Placement records

## 8.2.2 DETERMINING THE REQUIREMENTS FOR PRODUCT AND SERVICES

The customer in this case is student, employing industry, and the society. The curriculum and the delivery processes are designed and transacted in such a way that the requirements of the employing industry are fulfilled. For this, the information is collected from the employing offices from time to time and syllabus along with other activities are planned and designed accordingly. To ensure that the admitted and registered student clearly understand the requirements of their respective programmes and disciplines in order to qualify for the degree for which admitted and registered; information brochure is prepared and the students are advised to read the same. The brochure is provided both in hard and soft copy and is made available on the university website. Hard copy is also provided to the student at the time of registration. The scope includes the selection process and procedures for admission, registration, fee structure, rules and regulations, and execution of programmes. The brochure provides detailed information about scheme of the courses and availability of respective subjects under each scheme. It clearly provides the information regarding core courses, department electives and university electives along with number of credits offered by these courses. The university ensures that all courses meet the statutory and regulatory requirements of various national and international agencies including UGC and AICTE. The University is committed to facilitate for industry interaction and summer training to the students. The university also provide resume services, training in personality management and extracurricular activities for overall development of the students. The University also arranges short-term courses and expert lectures from the outside industry and these activities are also included in the scope of customer related processes. The responsibility of the customer's related processes lies with the following:

<b>S. N.</b>	<b>Scope</b>	<b>Responsibility</b>
1.	Information Brochure	Dean (UG/PG)
2.	Admissions (UG)	Chairman, Admission Committee (UG),
3.	Admissions (PG/PhD)	Dean (PG)
4.	Registration	Dean (UG/PG)/COE
5.	Execution of Programmes	Head of Academic Departments
6.	Continuing Education Programmes	Dean (Continuing Education)

7.	Outreach and extension of activities	Dean (Outreach & Extension)
8.	Research Projects, Consultancy and Testing Services	Dean (Industrial Research & Development)
9.	Health Services	Registrar
10.	Scholarships and Financial Assistance	Dean (Students Welfare)/ Dean (UG/PG)
11.	On campus hostel	Chief Warden
12.	Accommodation / Residence	Estate Officer
13.	Interface with outside institutions	Dean , Outreach & Extension Activities
14.	International Affairs	Dean, International Affairs
15.	Alumni Affairs	Dean, Alumni Affairs
16.	Student Matters such as sports, cultural, council, NSS, Societies, fee concession	Dean, Student welfare
17.	Internship, Training and Placement	Head Training & Placement
18.	Computational Facilities, Internet, website	Head Computer Center
19.	Internal Quality	Director, IQAC
20.	Skill Development	Director, HRD

### 8.2.3 REVIEW OF THE REQUIREMENTS FOR PRODUCT AND SERVICES

For every programme run by the University, the resource requirements are reviewed from time to time based on the changing requirements of the employing organizations and major developments in the area of science, technology, and management. It is ensured that the University has the capability and the capacity to impart quality education and to produce competent engineers and professionals in all the programmes run by the University.

### 8.2.4 CHANGES TO REQUIREMENTS FOR PRODUCT AND SERVICES

University shall ensure that the relevant changes will be made in the documented information whenever necessary and the relevant persons shall be made aware of the changed requirements.

## 8.3 DESIGN AND DEVELOPMENT OF PRODUCTS AND SERVICES

### 8.3.1 GENERAL

The University plans and controls academic design and development activities and the qualities required in the passing out students. The scope includes the following for all the programmes/ services offered by the University.

- a) Curriculum design
- b) Detailed syllabi of all courses
- c) Logical sequence of courses including their pre-requisites
- d) Lecture plan and course files
- e) Review, verification, and validation that are appropriate to each design development stage
- f) Responsibilities and authorities for design and development

The responsibility for design control lies with the following:

S.N.	ACTIVITY	RESPONSIBILITY
1	Identification, feasibility study and viability of new Programmes	Vice Chancellor, Pro Vice Chancellor, Dean (UG/PG), Board of studies (BOS), Faculty Meetings
2	Need Assessment, Design and Development (For New as well as review of on-going programmes)	Faculty meeting, HOD, BOS
3	Review and Verification of Need Assessment, Design and Development.	Academic Council
4	Validation and approval of Design and Development	AC, BOM
5	Approval by AICTE/UGC for new programmes.	Vice Chancellor/ Registrar
6	Approval/ Accreditation by NAAC/ NBA	Vice Chancellor/ Registrar/ Director IQAC

### 8.3.2 DESIGN AND DEVELOPMENT PLANNING

University ensures that the design and development activity is carried out in a planned manner. Design plans include the activities and sub activities including techniques & organizational interfaces and the time frame for completion. The plans are updated, as the instructional design evolves. Need analysis report (periodically or as per need) shall comprised of:

- Stated customer needs
- Needs which the customer has yet not realized (Implied needs).
- Overall goals of Instructions
- Relevant standards as per requirement of AICTE and UGC guidelines.
- General characteristics of target population.

Organizational and technical interfaces between different faculty and external expert groups providing input to the instructional design are defined, committees are constituted and their reports are documented. Faculty members from different disciplines connected with the design and development activity are associated with the process. The updating /restructuring is carried out as the design process progresses. Clear responsibilities are assigned and effective communication is ensured.

### **8.3.3 DESIGN AND DEVELOPMENT INPUTS**

The requirements of instructional design are determined and recorded. For instructional design, the input is taken from various sources. Input requirements are clearly understood and reconciled. The design input may come from:

- Need analysis and Reviews
- Recommendations from alumni, senior management, and industry
- Success/failure reports of similar courses and programmes
- Published literature relevant to programmes
- Interaction with the industry

### **8.3.4 DESIGN AND DEVELOPMENT CONTROLS**

The process of determining solutions to satisfy the identified needs is laid down and documented. Instructions are designed by incorporating these solutions. The analysis and mappings are recorded. The design output at this stage is taken as the initial design for subsequent reviews.

**REVIEW:** Reviews are conducted at defined stages of the curriculum design, in which Board of Studies members, Academic Council members, and BOM members as well as experts from the peer group from within and/or outside the University are engaged. Records of the reviews are maintained and the design is updated and brought into document control for revision based on these reviews. The design reviews are carried out at the end of each of the following stages using prescribed check lists:

- Need analysis
- Design and review by BOS
- Review by AC
- Review by BOM

**VERIFICATION:** Verification of design is conducted by comparison of the design with similar courses run by prestigious Universities. Evolved designs are also verified by taking independent opinion of the experts from the peer group from within or outside the University. The new curriculum is introduced only after adequate verification.

**VALIDATION:** New/revised curriculum and instructional design is made applicable to the prospective students. The curriculum is validated in the initial stages of its introduction by taking a close feedback from students and faculty members regarding the effectiveness and applicability of the curriculum, with regard to the documented needs. Necessary changes, if required, are made to ensure that the design conforms to defined needs of the students. Additional instructional sessions and allied inputs are arranged for students/participants whenever required.

### **8.3.5 DESIGN AND DEVELOPMENT OUTPUTS**

The output of instructional design and development is documented in the form of a report. Through various reviews and verifications, it is ensured that the design output meets the design input requirements. The design output report includes:

- The types and levels of skills and knowledge to be imparted
- Details of need analysis and mappings at various stages
- Scheme of courses and the detailed syllabi
- Instructional strategies.
- Selection of instructional aids for delivery.
- Assessment and evaluation.

The output documents like curriculum and instructional strategies are reviewed and approved before release at various levels and stages.

### **8.3.6 DESIGN AND DEVELOPMENT CHANGES**

Design changes are made both reactively as well as proactively. The need is identified through the feedback from the students and/or analysis of data of their performance. Periodic design changes are also affected to offset the obsolescence of the design or if a need for change is realized. All the steps as required for initial design & development are followed for effecting and incorporating changes. Review is carried out and changes are documented. Records of the results of the review are maintained.

## **8.4 CONTROL OF EXTERNALLY PROVIDED PROCESSES, PRODUCTS AND SERVICES**

### **8.4.1 GENERAL**

The University has made arrangements to ensure hiring of faculty, officials and staff as per laid down norms and procurement of physical infrastructure conforming to laid down standards and specified requirements. The Purchase section has a quality procurement policy. The important Consideration in purchase of Goods or services are

- (a) Quality
- (b) Reliability
- (c) Efficiency
- (d) Accountability
- (e) Economy

Efforts are being made to ensure placement of contract/ Purchase Order within the original validity of the bids. Specified quality and reliability of the supplier has to be taken into consideration with low cost involvement. However low cost will not always be the sole criteria of purchase, since the cheapest may not always be the best. The purchase procedure being followed in the University is based on the guidelines enumerated in the General Financial Rules 2017.

The scope and key responsibilities under purchasing includes:

**Vice Chancellor, DTU**

- (a) Hiring of faculty, officials, technical and other staff
- (b) All administrative approval irrespective of purchase value.
- (c) All expenditure sanction beyond delegated financial power of Pro Vice Chancellor.

**Pro Vice Chancellor, DTU**

- (a) All expenditure sanction within the delegated financial power of Pro Vice Chancellor.
- (b) Endorsement on all cases submitted for approval of Hon'ble Vice Chancellor.

**Registrar, DTU**

- (a) All expenditure sanction within the delegated financial power of Registrar, DTU.
- (b) Endorsement on all cases submitted for approval of Hon'ble Vice Chancellor/Pro Vice Chancellor.
- (c) Purchase of physical infrastructure for general purchases e.g. office furniture and equipment, consumable like stationery and Housekeeping items

**OIC (S&P), DTU**

- (a) Signature & Issue of all NITs after approval of competent authority.
- (b) Processing all cases of central procurement.
- (c) All GeM procurement in the University.

Hiring of manpower and purchase of physical infrastructure are carried out in such a way that ensures quality of product as well as satisfaction of laid down norms & financial powers. Delegated power, if any, including regulatory requirements have been specified and are adhered to. Purchase activity may be conducted through any of the following modes:



**(a) HIRING OF MANPOWER**

All regular appointments shall be through invitation or advertisement published in newspaper/magazines and/or through search committees constituted for the purpose. Subsequently, duly constituted selection committees as per the laid down criteria shall hold interviews. Selection shall be made on merit. Temporary appointments, if needed, shall be, made on the recommendation of HOD's with subsequent approval by the prescribed appropriate authority.

**(b) PURCHASE OF PHYSICAL INFRASTRUCTURE**

Based on the urgency, expenditure involved and nature of stores to be purchased, various methods of procurement are to be followed:

- (a) Purchase of Goods through GeM.
- (b) Purchase of Goods without quotation (GFR-154).
- (c) Purchase of Goods by Departmental Purchase Committee (GFR-155).
- (d) Purchase of Goods by obtaining bids
- (e) Purchase of Goods by Single Tender Enquiry (GFR-166)
- (f) Electronic Reverse Auction (Refer GFR 166)

**(c) FOR PHYSICAL INFRASTRUCTURE:**

For regularly purchased high value/ high volume items, the subcontractors shall be evaluated to assess their ability to meet subcontract requirements through:

- Initial evaluation
- Post approval Periodic evaluation.
- Evaluation process shall be based on one or more of the following criteria:
  - Inspection & Evaluation of subcontractor's quality system.
  - Evaluation of product/material.
  - Subcontractor's past history & quality rating, wherever available.

Items/product wise list of approved subcontractors shall be maintained in the department. Control shall be exercised on the subcontractors depending on the criticality of the product through product classification and the past experience and quality rating (if available) of the subcontractors.

**(d) FOR FACULTY HIRING:**

For augmenting the faculty in deficient area or in case of an emergent need, faculty services shall be hired from outside, based on a specified evaluation process and as per laid down criteria.

**(e) FOR STUDENTS PROJECT SEMESTER PLACEMENT:**

Identification of prospective industries/organisations where students shall be placed for project semester evaluation, shall be carried out based on following considerations:

- Organisation's reputation, corporate image and market reputation.
- Sales turnover and Number of employees.
- Qualifications of personnel at the executive level.
- Nature of Projects that can be undertaken / offered.
- Support Facilities offered by the organisation.

**8.4.2 TYPE AND EXTENT OF CONTROL**

Following controls are developed by the university for the externally provided product and services.

**(a) VERIFICATION OF HIRED MANPOWER**

Hired manpower shall be periodically appraised as per documented procedures during probation and before confirmation as well as thereafter to ensure that they meet all specified requirements.

**(b) VERIFICATION OF PURCHASED PHYSICAL INFRASTRUCTURE**

The verification of purchased physical infrastructure shall be carried out as per the details given in purchasing documents, quality plans and records thereof shall be maintained.

**(c) VERIFICATION OF PURCHASED PRODUCT AT THE PREMISES OF SUBCONTRACTOR.**

Wherever specified in the purchase data, the machinery, equipment and other items shall be inspected by the indenter and verified at the subcontractor's premises.

**(d) RECORDS**

All purchase records shall be maintained as per documented procedures.

**8.4.3 INFORMATION FOR EXTERNAL PROVIDERS**

Purchase documents have been designed to include all product/service specific acceptance criteria, cost details, requirements of qualifications of personnel and the quality management system requirements.

**8.5 PRODUCTION AND SERVICE PROVISION****8.5.1 CONTROL OF PRODUCTION AND SERVICE PROVISION**

The Instructional process in the University is planned, documented, and executed under controlled conditions for the attainment of desired goals. The major components of the instructional process to be controlled are:

<b>S. N.</b>	<b>Scope</b>	<b>Responsibility</b>
(a)	Need Assessment	Faculty, HOD, BOS
(b)	Instructional Design & Development	BOS, Academic Council
(c)	Imparting Instructions/ Teaching	Faculty, Time table In-charge, HOD
(d)	Conduct of Examinations	Controller of Examination
(e)	Outcome Measurement/ Evaluation	Faculty, HOD
(f)	Discipline	Dean Student Welfare, Board of Discipline
(g)	Major support processes like administration, co-curricular activities, library, sports and extra-curricular activities	Deans
(h)	Short Term Courses	Dean Continuing Education
(i)	Ensuring Quality in teaching-learning process and feedback	Director, IQAC

The control of instructional process in the University includes the following:

- Planning & execution of instruction as per curriculum needs for core and professional courses, with or without laboratory component, in compliance with references/codes designed curriculum and guidelines of UGC/ AICTE/ NBA.
- Ensuring adequacy of qualified and trained manpower and physical infrastructure according to designed curriculum and class strength.
- Provision of requisite material support such as (i) Class rooms with proper seating arrangements, White boards, marker pens, duster, audio visual aids (ii) Laboratories equipped with Machines, equipment, tools, instruments, test samples, consumable and (iii) Library having Text books, reference books journals/video cassettes and other referral material.
- Maintenance of equipment and facilities to ensure their continued availability and process capability. This includes the machines, equipment and instruments/ tools in the workshops and laboratories used in the instructional process as well as availability and use of monitoring and measuring equipment
- Planning and undertaking Industrial/ educational visits.
- Placement, training and evaluation of students for Project Semester in private/ public sector/ industry/ organizations.
- Continuous monitoring and maintenance of instructional process parameters.
- Monitoring and control of any deviations of product qualities or process parameters from design specifications.
- Planning, execution and control of the following co-curricular/ extracurricular activities to achieve the quality objective w.r.t. development of personality & physical/ mental fitness of students.
- Professional & literary societies organizing specialized seminars, quizzes, contests, group discussions, panel discussions, interaction between students, teachers and staff members for improving general skills of communication and presentation.

All educational & training processes are special processes, as their quality cannot be measured immediately after delivery. Instructional process and plan is accordingly documented. Duly

qualified and trained faculty & technical staff are assigned the responsibility of imparting instructions to ensure desired results.

### 8.5.2 IDENTIFICATION AND TRACEABILITY

The University has made arrangements for identification of students & ensures traceability of data related to them throughout the realization process. The scope includes the following:

Scope	Responsibility
<b>(a) Student Identification through</b>	
Original Application Form	Dean Academic (UG) Dean Academic (PG)
Original certificates	Dean Academic (UG) Dean Academic (PG)
Roll No., which provides information about their batch, branch and a unique Roll number.	Dean Academic (UG) Dean Academic (PG)
Semester Registration Record	Dean Academic (UG) Dean Academic (PG)
Identity Card issued to all registered students (Hosteller/ Day scholars with address) every year.	Registrar/ Office In charge Hostel
Library Card	Librarian
Email address, login ID & password	Hod Computer center
<b>(b) Traceability of student's data through:</b>	
Class schedule	Time table In-charge/ HOD
Attendance record	Computer center / Teacher
Performance record	Controller of Examination
Placement Record	Head T & P

The arrangements made in the University for Identification and traceability:

- (a) Preservation of original application form of each student in personal file.
- (b) Collection, verification, storage, preservation and return of original certificates.
- (c) Issuing a unique roll number depicting batch.

- (d) Issuing an Identity Card (Hosteller/ Day Scholar with address).
- (e) Creating Email address, login ID & password for each student.
- (f) Maintaining record of registered courses (Number & Course Title).
- (g) Maintaining record of applicable scheme and syllabi.
- (h) Scheduling various classes/Time Table.
- (i) Maintenance of attendance record.
- (j) Maintenance of placement record.
- (k) Transferring grades earned in each subject to academic account and finally to transcripts of students.
- (l) Compiling the record of courses cleared and grades obtained in the consolidation sheet for award of final degree to students.
- (m) Each department shall maintain identification & traceability of registered students in their respective disciplines and will have appropriate records.

### 8.5.3 PROPERTY BELONGING TO CUSTOMER OR EXTERNAL PROVIDERS

The University has made arrangements for verification, storage and maintenance of customer supplied product, provided for incorporation into the supplies or for related activities. The scope shall include:

- Items supplied by the customer (students) for evaluation.
- Items supplied by the customer during consultation/ testing/ short term customized training programmes.

The responsibility for customer property is as under:

Items	Responsibility
Original certificates	Dean Academic (UG), Dean Academic (PG)
Tutorial & Home Assignments	Faculty
Laboratory Note Books	Faculty/ Lab In-charge
Report of Project work	HOD/ Library
Answer Books	Controller of Examination

Arrangements have been made for the following:

- (a) Receipt, verification & return of original certificates.
- (b) Receipt, evaluation & return/ preservation of laboratory note books, tutorials and home assignments.
- (c) Receipt, evaluation, return/ preservation of mid semester tests and end semester examination answer books.

#### **8.5.4 PRESERVATION**

The product in the case of educational University is the students. Most of the preservation part of this part has been dealt with in various clauses. In addition to these, the University has also made arrangements for taking care of the students and their well-being by the following:

- (a) Maintaining discipline in the campus including University, hostels and play grounds.
- (b) Making arrangements for games, sports and other facilities for keeping them in good health.
- (c) Making available the health centre facility.
- (d) Counselling to students who need it.
- (e) Maintaining hygiene in hostel messes, college canteen and water coolers etc.

#### **8.5.5 POST-DELIVERY ACTIVITIES**

The post deliver activities of the product and services provided by the university meet all the regulatory and statutory requirements. The requirement of organization/ institutions are given priority and feedback is maintained on the product/ services for continual improvement.

#### **8.5.6 CONTROL OF CHANGES**

The feedback received is used to decide the changes in the process to meet the customer requirements. All such decisions are documented and approved by authorized body.

## 8.6 RELEASE OF PRODUCTS AND SERVICES

The product/ services is released only after meeting the acceptance criteria and approved by the relevant authority. The evidence of the conformity to the acceptance criteria is documented and preserved which is also traceable.

## 8.7 CONTROL OF NONCONFORMING OUTPUTS

Documented procedures have been established to ensure that non-conforming students or items of physical infrastructure are prevented from further processing and that their control provides for identification, documentation, evaluation and disposition under intimation to all concerned.

The scope and responsibility for conduct of non-conforming product includes:

SCOPE	RESPONSIBILITY
Non-conformance identified during revision & verification of course design.	HEAD
Students' performance below the specified requirements during the instructional process.	HEAD, Dean UG,PG
Instructional delivery not conforming to specifications	Course Instructor, HEAD
Materials and services not conforming to the specified requirements	HEAD

Documented procedures include the following:

- i. Student whose performance is below the specified requirement are identified and listed separately. Procedure for identifying such students, referring them to counseling service through designated counsellors, heads, course instructor, dean (UG/PG), dean (SW), Pro Vice-chancellors, Vice Chancellor has been established.
- ii. Feedback regarding conduct of courses is obtained from students through "Student Response Survey" conducted by DOAA each semester. A specially designed object oriented Performa is used for getting this feedback. Rating of faculty on course, instruction, tutorial, practical & misc. items is reported in descending order of instructions & feedback



is sent to individual faculty member for improvement. Students are also encouraged to give informal feedback during instruction process. In addition, if any non-conformance is noticed during inspection or periodic audit of the process, the same is corrected.

- iii. Physical infrastructure if found non-conforming, is corrected or disposed of as per documented procedure.

### **8.7.1 REVIEW AND DISPOSITION OF NON-CONFORMING PRODUCT**

Documented procedures also address the aspects of review and disposition of the non-conforming product. The outline of these procedures is given below:

- i) The students whose performance has not been up to the mark are counselled, their performance discussed in the Heads Group meeting and a suitable corrective action taken which may include.
- ii) Providing additional opportunities to improve and conform to requirements
- iii) Regarding non-conformance of instructional performance with the instructional design or non-conforming performance of the instructor, action is taken based on a documented procedure/norms & rules of the University. Actions entail giving feedback to the concerned instructor and/or planning and implementing a corrective action under intimation to Head.
- iii) Regarding physical infrastructure disposition of non-conforming product is carried out by taking up and examining the matter at the appropriate level. Action may include maintenance or rejection of goods or services.

## **9. PERFORMANCE EVALUATION**

### **9.1 MONITORING, MEASUREMENT, ANALYSIS AND EVALUATION**

#### **9.1.1 GENERAL**

The University applies suitable methods for monitoring and measurement of processes of quality management system. This monitoring and measurement demonstrate the ability of the processes to achieve planned results. The established methods include:

- i. Maintenance of course file and lecture plan by every teacher. The checklist of the documents to be attached and their order is prepared.
- ii. Filling up of course coverage Performa by each teacher and its counter checking by head of the department.
- iii. Surprise checks by HOD and Vice Chancellor to ensure that classes are held.
- iv. Maintenance of attendance records and declaration of short attendance list at timely intervals.
- v. A minimum of four assignments/ tests to be submitted for internal assessment in addition to the university level mid Semester and end Semester Examinations.

### **9.1.2 CUSTOMER SATISFACTION**

The University has created well developed system for monitoring progress, evaluating and providing valuable feedback to ensure that the processes meet customer requirements and the information is collected using the following established mechanism:

- Student Feedback is regularly taken on matters related to delivery of instruction, courses taught, industry application and overall relevance.
- Feedback on industry requirements is collected from different companies and organizations coming for the campus placements.
- Feedback from students after they spend internship in industry.
- Feedback from Alumni

The information thus collected is summarized, and analyzed and the results of the analysis are used as a feedback to further improve the system. Heads of departments review the feedback and specify guidelines for further improvement wherever applicable.

### **9.1.3 ANALYSIS AND EVALUATION**

The University has made arrangements for evaluating and meeting the specified requirements for students at entry, during the instructional process and finally before qualifying for award of degree as well as for other physical infrastructure so that accepted students, instructions & materials are processed further. Special Classes and Remedial Classes are organized for weaker students in every semester.

The scope and responsibility for monitoring and measurement of product is as under:

Scope	Responsibility
<b>(a) Students</b>	
Entrance/diagnostic examination	JEE Mains/ GATE/ CAT/ University Entrance Examination
Course Examination	HOD, Course Instructor
Continuous evaluation as conducted during the process	Course Instructor, IQAC
Summative evaluation at the end of the Semester	COE, BOS, Course Instructor
<b>(b) Physical infrastructure</b>	
Inward and in-process inspection Lab Manuals and Equipment	HOD, Lab In -charge

Following types of evaluation is performed by the University.

#### **(a) ENTRANCE/DIAGNOSTIC EXAMINATION**

Admissions to various undergraduate programmes are made through JEE mains, post-graduate programmes through GATE & CAT and PhD through entrance examination. Eligibility information for each programme is contained in the University Regulations and also in the Information Brochure issued every year.

#### **(b) FORMATIVE EVALUATION AS CONDUCTED DURING THE INSTRUCTION PROCESS**

The instruction process shall be reviewed & verified for adequacy. Continuous evaluation of students shall be carried out through examinations and/or other modes during delivery of instructions. The evaluation process shall include:

- i. Course plan and Lecture plan to ensure that instructors & tutors follow a laid down plan for imparting instructions.
- ii. Mid semester test, announced or unannounced quizzes and practical viva-voce examinations.
- iii. Evaluation of home assignments, laboratory work, tutorial work and participation in class discussion/seminars

- iv. End Semester Examination conducted for all undergraduate & post graduate courses in which student is registered each semester as per established documented procedures.

**(c) SUMMATIVE EVALUATION AT THE END OF THE INSTRUCTION PROCESS**

A check list Performa has been established and is used to review and verify that the students have completed (fulfilled) all requirements for the award of the degree.

Inspection of all physical infrastructures procured by the University for use in instructional process or for further processing shall be carried out as per documented procedures. The records of inspection & testing shall be maintained as per documented procedures. Evidence of conformity with the acceptance criteria is maintained.

The University has made arrangements to determine, collect and analyze appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made. This includes data generated as a result of monitoring and measurement and from other relevant sources. The analysis of data provides information related to customer satisfaction, conformity to product requirements characteristics trends of products including opportunities for preventive action and suppliers. Presently analysis of data is being carried out in the following areas:

<b>Scope</b>	<b>Responsibility</b>
Awarding grades	Instructor
Success rate	Dean (AUG/APG)
Attrition rate	Dean (AUG/APG)
Research Output Trend Analysis & Correlation	Dean IIRD)
Student Response Survey	Director, IQAC
Analysis of effectiveness counseling	Functional Head
Campus Interview records and co-relation with students performance	Functional Head

## 9.2 INTERNAL AUDIT

The University conducts internal audits every year to verify whether established QMS are followed to determine effective implementation. A team of government nominees comprising finance experts visit the university every year and Internal Audit is carried out in a planned manner. Departmental Audit by non-departmental faculty members is also carried out annually.

The scope covers all activities of the quality system affecting quality of the instruction. The responsibility of scheduling internal quality audits lies with the Director IQAC. The arrangements made for conducting internal audits are:

- i. Documented procedure to define the responsibility and requirements for planning and implementing internal quality audits has been established and maintained.
- ii. The frequency of the internal quality audits has been decided based on the status and importance of the activity but in no case the frequency shall be less than once in a year.
- iii. The audit of an area/ activity would be carried out by trained personnel other than those directly responsible for the said activity.
- iv. The results of the internal quality audits are recorded and report is given to concerned functional Head.
- v. Timely action on the reported non-conformities is planned and taken by concerned functional Head.
- vi. Follow-up audit is conducted in-order to verify and record the implementation and effectiveness of the corrective action(s) taken.
- vii. The results of the internal quality audits are sent to M.R. for management review and record.

The selection of auditors and conduct of audits is made so that it ensures the objectivity and impartiality of the audit process. Auditors do not audit their own work.

## **9.3 MANAGEMENT REVIEW**

### **9.3.1 GENERAL**

The review of the quality system shall be carried out once every six months to ensure continuing suitability, adequacy and effectiveness in satisfying the requirements of the standard and the quality policy of the University. The review includes assessing opportunities for improvement and the need for change to the quality management system. Reviews shall be carried out based on the inputs for the review period from the following sources:

### **9.3.2 MANAGEMENT REVIEW INPUTS**

- (a) Action taken report on the previous management reviews
- (b) Results of Internal quality audits
- (c) Results of student's performance in various examinations
- (d) Result of Students Response Survey
- (e) Feedback from Industry, Alumni, participating organizations in campus placement and other concerned sources
- (f) Details of corrective/preventive actions
- (g) Improvement programmes suggested/recommended
- (h) Training programmes launched
- (i) Review of quality policy and objectives
- (j) Changes that could affect the QMS

### **9.3.3 MANAGEMENT REVIEW OUTPUTS**

The output from the Management Review is in the form of an 'Action Plan', which includes actions to be taken, responsibility, target date, resource requirements etc. related to

- (a) Improvement of the effectiveness of QMS and its processes
- (b) Improvements in products related to customers
- (c) Resources needed

The management representative keeps the record of management review.

## 10. IMPROVEMENT

### 10.1 GENERAL

### 10.2 NONCONFORMITY AND CORRECTIVE ACTION

The University takes action to ensure that the recurrence of non-conformities or discrepancies, which are reported to have occurred at some point of time or which are likely to occur, are prevented. This is ensured by analyzing the problem, finding its root cause and eliminating it. The scope includes:

Scope	Responsibility
Customer (students) complaints/suggestions/ comments	Head/Dean
Success/Failure rates	PVC/Dean/Head/ COE
Non-conformities reported in instructional design and/or delivery	Head/ Vice Chancellor
Non-conformities in use of physical infrastructural facilities	Head/Register
Non-conformities as a result of Internal Quality Audit	M.R.

Documented procedure has been established for the following:

- i. To handle customer (students) complaints, suggestions & comments, feedback from instructors, other sources like industries, companies coming for campus recruitment companies, etc. and reports regarding product non-conformities, if any.
- ii. To review the non-conformity and investigate the cause of reported non-conformities and recording the results of the investigation.
- iii. To evaluate the need for action, determining and implementing the decision to take corrective action effectively in-order to eliminate the cause of non- conformities and recording the results.
- iv. To apply controls in-order to ensure non-recurrence of reported non-conformities.
- v. Review the effectiveness of the corrective action taken.

- vi. Corrective action taken to ensure conformity is decided according to the degree of the problem and commensurate with the risks involved. Actions taken include revision of course by external subject experts in BOS meetings and review by Academic Council meeting. Any change in method of delivery of instruction or instructor may be carried out in response to the feedback received.

### **10.2.1 PREVENTIVE ACTION**

The University determines action to eliminate the causes of potential non-conformities in order to prevent their occurrence. Preventive action is appropriate to the effects of the potential problems. A documented procedure has been established which includes:

- (a) Prior planning and adequate preparation to ensure that processes move in right direction.
- (b) To analyze information pertaining to feedback received through student satisfaction survey, result of students, CGPA levels of class, feedback from the companies who came for campus recruitment and other such sources with a view to determine potential non-conformities.
- (c) To determine steps needed to deal with any problem requiring preventive action.
- (d) To initiate preventive action and to apply controls to prevent non-conformities.
- (e) To confirm that relevant information on actions taken to prevent non-conformities is submitted for management review.
- (f) Recording the results of action taken and reviewing the preventive action.
- (g) Review the effectiveness of the preventive action taken.

Any changes made to the procedures resulting from corrective and preventive action are recorded and implemented.

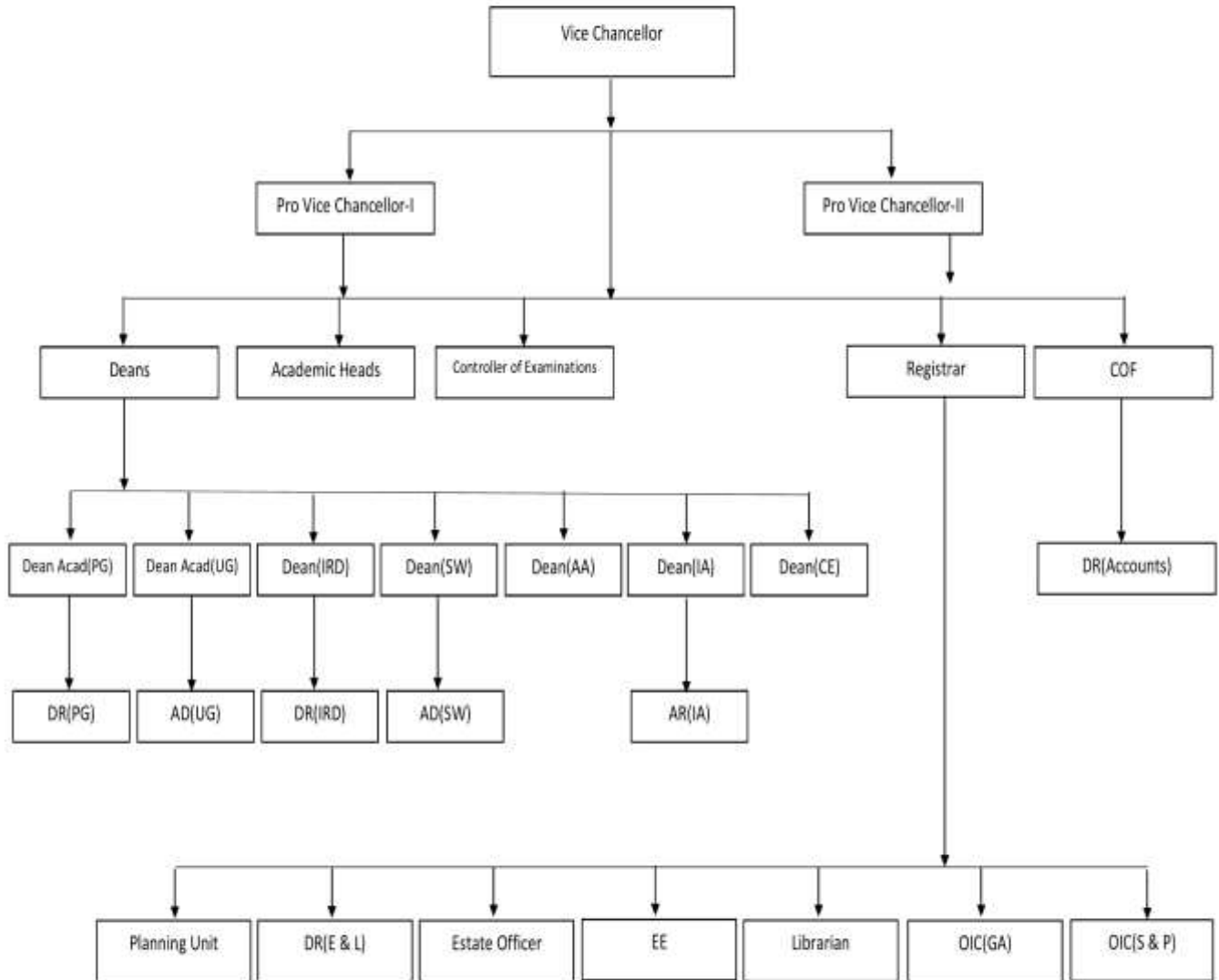
### **10.3 CONTINUAL IMPROVEMENT**

The University continually improves the effectiveness of the quality management system through the use of quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. At the time of every management of review, through the measure of each objective and its comparison with earlier level of that objective, the trends are ascertained. Action points are then listed to continually improve the system. The status is reviewed in the subsequent management review meetings.



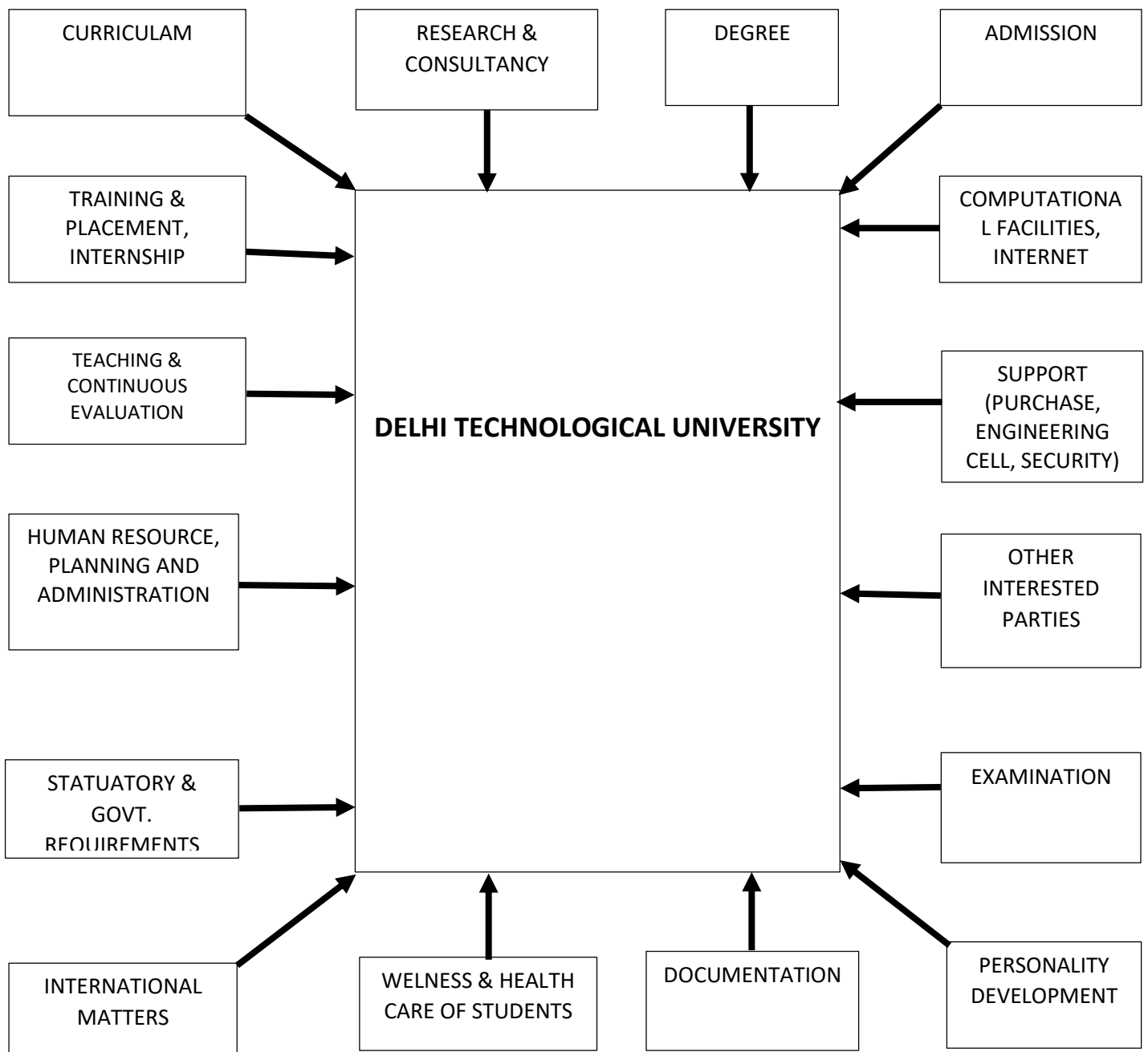
**Annexure-I**

**ORGANIZATIONAL CHART**



**The above Organization structure is common for main campus as well as East Delhi Campus of Delhi Technological University.**

**Annexure-II**



**DELHI TECHNOLOGICAL UNIVERSITY – Flow of Processes**

**Annexure-III****RISK ANALYSIS**

1. CURRICULAM
  - Updating on regular interval
  - Time line and coverage
  - Relevant to Industry and Social needs
2. RESEARCH & CONSULTANCY, INNOVATION
  - Plagiarism
  - Financial and Infrastructure support
  - Timeline
  - Non availability of staff for project work and consultancy
  - Delay in receipt of grants/ fund for project/ consultancy
3. DEGREE
  - Timeline
  - Printing/ typographical error
  - Record keeping and preservation
4. ADMISSION
  - Forged documents
  - Time line
  - Data confidentiality and security
  - Malfunctioning of IT Infrastructure
  - NIC Support
5. TRAINING & PLACEMENT, INTERNSHIP
  - Large no. of students
  - Shortage of regular manpower
6. TEACHING & CONTINUOUS EVALUATION
  - Performance of student with continuous evaluation
  - Attendance
  - Experimental failures
  - Pressure and stress due to academic work on students and faculty
  - Discrimination and harassment
  - Less interest in extracurricular activities
  - Placement

7. COMPUTATIONAL FACILITIES, INTERNET
  - Confidentiality of digital data on DTU web servers and online portals
  - Failure of intranet and related infrastructure
  - Failure of lease line (primary & secondary) on Internet
  - Hardware failure of network devices and servers
  - Long power failures
  
8. SUPPORT (PURCHASE, ENGINEERING CELL AND SECURITY)
  - a) PURCHASE
    - Incomplete indent/ bid documents
    - Low response by bidders
    - Communication failure/ delay with bidders
    - Delay in delivery
    - Unsatisfactory supply and service
    - Delay in payment of supplier and service provider
    - Cartel by vendors/ vested interests
  
  - b) ENGINEERING CELL
    - Time line in execution of work
    - Limited regular manpower
    - Delay in payment of the contractors and suppliers
    - Use of allotted accommodation for commercial/ private use
  
  - c) SECURITY
    - Large no. of local people entry for walking during before and after office hours
    - Insufficient space for vehicle checking during peak hours
    - Verification of temporary workers/ servants/ casual labourers
    - Large area to manage and dense rural locality surrounding the University
  
9. HUMAN RESOURCE, PLANNING AND ADMINISTRATION
  - Shortage of work force and infrastructure
  - Compliance with Act and Statues of University
  - Compliance with requirements of Regulatory and statutory Bodies
  - Compliance with Govt. of NCT of Delhi directions
  - Compliance with the directions of different bodies of the University
  - Correctness of the primary data
  - Incomplete entries in the service book
  - Confidentiality of the information
  
10. STATUATORY & GOVT. REQUIREMENTS
  - Compliance with Act and Statues of University
  - Compliance with requirements of Regulatory and statutory Bodies

- Compliance with Govt. of NCT of Delhi directions

#### 11. EXAMINATION

- Secrecy and confidentiality of data
- Timeline
- Server failures
- Record keeping

#### 12. INTERNATIONAL MATTERS

- Change in International scenario and relations with India
- Adoption of culture by students

#### 13. WELNESS & HEALTH CARE OF STUDENTS

- Infrastructure
- Medical Expertise
- Confidentiality in student counselling

#### 14. PERSONALITY DEVELOPMENT

- Enrollment in various councils/ sports
- Active participation
- Non settlement of advances taken by students

#### 15. DOCUMENTATION (Academic, SOP, Students, Result)

- Record keeping and archiving
- Security and confidentiality of data
- Retrieval of records
- Timely updating and auditing

#### 16. OTHER INTERESTED PARTIES

- Expectation of parents
- Expectations of Alumni
- Expectation of Industry and Society at large
- Expectation of Auditors