

**SYLLABUS FOR WRITTEN EXAM SPONSORED CANDIIDATES FOR M.TECH IN GEOINFORMATICS**

SN	TOPICS	WEIGHTAGE
1	<b>Mathematics and Statistics:</b> Limits, continuity, differentiability, partial derivatives for functions of several variables, Jacobians, homogeneous functions. Laplace transformation, its properties and its applications. 3-dimensional geometry, differential equations (ODE, PDE). Coordinate systems and coordinate transformations, Matrix analysis, Vectors rotation and translation. Basics of probability and statistics, measures of central tendencies, probability distribution models,	20%
2	<b>GIS and remote sensing:</b> GIS, spatial data, attribute data, data sources, basics of geodesy, geographic coordinate system, applications of GIS, electromagnetic radiation, electromagnetic spectrum, remote sensing satellites. types of satellite data, basics of photogrammetry and image interpretation, types of remote sensing	20%
3	<b>Surveying and GPS:</b> Principles of surveying, types of survey, chain, compass and theodolite survey, levelling, contouring and tacheometry, traversing and triangulation. Fundamentals of satellite orbits, Kepler's laws, GPS signals, GPS observable and error sources and various GPS surveying techniques.	20%
4	<b>Computer/IT/Software/Electronics:</b> Basics of computer, hardware, software, fundamentals of database, C/C++ programming, internet, basics image processing, big data, data science, basic electronics, sensors, radars and resolutions	20%
5	General Awareness and mental ability	20%