

**Pre-requisite for Admission into Ph.D. Programme and Area of Research (Spring Semester 2016)**

<b>School</b>	<b>Department</b>	<b>Pre-requisite</b>	<b>Area of Research</b>
<b>Engineering</b>	<b>Civil Engineering</b>	M.E./M.Tech. /M.Sc.(Engg.) in Civil Engg. or allied areas or M.Sc. in relevant discipline with minimum 70% marks in aggregate or equivalent CGPA. B.E. / B.Tech with 80% marks in aggregate or equivalent CGPA with a valid GATE Score.	Civil Engineering, Environmental Engineering, Environmental Science, Geotechnical Engineering
	<b>Computer Science and Engineering</b>	M.Tech. in Computer Science/ I.T./ Electronics MCA M.Sc. in Computer Science/ I.T. B.E./B.Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE Score.	Big Data Analysis and Machine Learning, Computational Linguistics, Natural Language Processing, Speech Processing, Wireless Networks and Mobile Computing, Pattern Recognition, Data mining, Image Processing
	<b>Electronics and Communication Engineering</b>	M.E. / M.Tech. / M.Sc. Engg. / M.S. in Electronics/ Communication/ Electronics Design/ Electrical/ Instrumentation/ Control/ Microwave/ Biomedical/Bioelectronics/ Bio-Technology/ Computer Science/ Information Technology. M.Sc. in Electronics/ Physics/ Applied Mathematics. MCA with Physics, Chemistry and Mathematics in Bachelor degree, MBBS with MD/ MS degree. B.E. / B.Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE score.	Microwave Antennas, Microwave Absorbing Materials, Instrumentation, Integrated Optics Devices, MOEMS, Clinical Instrumentation, Power Electronics, Vehicular Electronics, Neuro Engineering, Image Processing, Compressive Sensing MRI, Biomedical Signal Analysis
	<b>Food Engineering and Technology</b>	M.Sc. / M.Tech. / M.E. in Food Technology/Food Processing Technology/ Food Science and Technology / Food and Nutrition / Microbiology / Food Microbiology / Biochemistry / Chemistry / Biotechnology/ Food Engineering/ Applied Microbiology/ Dairy Engineering/ Food Biotechnology Engineering. B.E. / B.Tech. with an aggregate of at least 80% marks or equivalent CGPA.	Chemistry and Biochemistry of Foods, Food Quality, Traditional Fermented Foods, Food Engineering, Modeling of Drying, Food Process Engineering, Fruits and Vegetables Processing, Cereal Processing
	<b>Mechanical Engineering</b>	M.E. / M.Tech. / M.Sc. (Engg.) in Mechanical Engg. or allied areas. B.E. / B.Tech with 80% marks in aggregate or equivalent CGPA with a valid GATE Score.	Optimization/Operations Research, Thermodynamics/Fluid Flow/Heat Transfer, Material Science
	<b>Energy</b>	M.Sc. / M.E. / M.Tech. degree in Energy Technology/ Energy Management/Energy related Engineering and Technology/ Physics/ Chemistry/Agriculture Allied sub-jects.	Biofuel, Catalytic Transformation of Biomass into Biofuel & Chemicals, Energy & Environment, Renewable Energy, Applications of Modeling Techniques for Energy Management and Rural Energy

			Management, Thermo-chemical Conversion of Biomass and Wastes to Bio-fuel and Bio-char, Fuel Cell, Hydrogen Production, Redox Flow Batteries, Graphene Derived Electrocatalyser, Solar Energy, Solar Cell, PV System, Hybrid Renewable Energy Systems
<b>Humanities and Social Sciences</b>	<b>Cultural Studies</b>	M.A. in any of the disciplines in Humanities or Social Sciences with a uniformly good academic career. Candidates with UGC JRF, UGC NET or NE SET will be given preference	Cultural History, Science Studies, Film Studies
	<b>English and Foreign Languages</b>	M.A. in English (specialization may be in Literature, English Language Teaching or Linguistics) M.A. in Linguistics	Linguistics, Semantics, Cognitive Linguistics, ELT, Curriculum Development, Language Policy, Material Production, Indian Writings in English, Post – Colonial Literature, Critical Theory, Eco Criticism, Language Typology, Morphology, Language Endangerment, Multilingualism, Sociolinguistics
	<b>Sociology</b>	Post – Graduation in Sociology / Cultural Studies / Anthropology (with specialization in Social Anthropology) / Economics / History / Political Science / Philosophy / Mass Communication / English / Law / Management/ Social Work.	Sociology of Movement, Agrarian Sociology, Village Studies, Sociology of Education, Gender & Community, Identity, Multiculturalism
<b>Management Sciences</b>	<b>Business Administration</b>	M.B.A. M.Com. M.A. / M.Sc. in Economics M.A. in Psychology/ Sociology/Social Work/Cultural Studies MCA M.T.M. / M.T.A. FCA/ FCS/ FICWA	Services Marketing, Tourism, Marketing and Promotional Strategies, Consumer Behavior, Change Management and Human Resource Management, Organization Behavior, Systems management, Operations, Project Management, Tourism, Quality Management, Economics, Tourism Management, Entrepreneurship, Business Ethics, Financial Inclusion, Social Development Sector, Capital Market
<b>Sciences</b>	<b>Chemical Sciences</b>	M.Sc. in all branches of Chemical Science/ Physics/Nanoscience/ Material Science/ Biotechnology/ Biochemistry/ Bioinformatics/ Environmental Science. M.E./M.Tech. in allied subjects (Chemical Engineering/ Polymer Technology/ Material Sciences/ Environmental Engineering etc.); B.Tech. in Chemical Engineering/ Polymer Technology/ Material Sciences/ Environmental	Polymer Nanocomposite, Catalysis and Theoretical Chemistry, Theoretical Inorganic/Organometallic Chemistry, Synthetic Organic Chemistry & Catalysis, Electrochemical Biosensors, Gas Sensors, Inorganic Material, Catalysis, Single Molecular Magnetism

		Engineering, etc. with 80% marks in aggregate or equivalent grade.	
	<b>Mathematical Sciences</b>	M.A. / M.Sc. in Mathematics/ Statistics/ Physics/ Computational Seismology/ Economics with requisite background in Mathematics.	Number Theory, Graphs and Matrices, Ring Theory, Computational Fluid Dynamics, Abstract Differential Equations, Theory of Finite Group, Algebraic Graph Theory
	<b>Molecular Biology and Biotechnology</b>	Masters in any branches of Life Sciences/ Physical Sciences/ Chemical Sciences/ Mathematical Sciences/ Agricultural Sciences / Veterinary or Engineering Sciences / Medical Sciences or in any allied field. B. Tech./ B. E. degree with 80% marks in CGPA (with GATE score > 90.00 percentile) in Chemical Engineering/ Chemical Sciences/ Bioinformatics or any allied field. MBBT or BVSc. degree with at least 60% marks or equivalent CGPA. Apart from the above, candidates having consistently good academic record will be preferred.	Proteomic analysis of snake venom, Innate Immunity & Immunogenetics, Virology, Cancer Chemoprevention and Genetics, Bioremediation/Psychoneuroimmunology, Nano-biotechnology/Plant functional Biology, Computational Biophysics & Agricultural Bioinformatics, Cell and Molecular Biology/Protein Arginylation, Bioinformatics & Computational Biotechnology, Insulin resistance and Type 2 diabetes
	<b>Physics</b>	M.Sc. in Physics/ Electronics/ Geophysics/ Material Science/ Applied Mathematics/ Nanoscience and Technology/ Biotechnology/ Environmental Science and Chemical Science. M.Phil., M.Tech. in Solid State Material/ Material Science/ Electronics/Energy/ Nanoscience and Technology/ Biotechnology/ Environmental Science and Chemical Sciences. B.Tech. in Engineering Physics with 80% marks in aggregate or equivalent CGPA.	Optoelectronic Instrumentation, Nanoscience & Nanophotonics, Astrophysics, High Energy Physics, Condensed matter Physics/Materials Science, Photonics, SERS, Astronomy, Physics of nanomaterials
	<b>Environmental Science</b>	Masters in any Science/ Applied Science / Engineering discipline with at least 55% marks or equivalent CGPA. At Bachelor's level the candidate must have attended Science / Technology programme.	Water and Soil Pollution, Hydro-geochemistry, Remediation of Toxic Substances, Geomorphology, Regional Climate, Forest Ecology, Wildlife and Bio diversity Conservation, Stress Physiology and Biochemistry, Vermiculture and Plant Nutrition and Soil Fertility Management