

List of Subjects offered in Research Centre for Ph.D.

Sr. No.	Name of the college	Stream/Branch	Compulsory Subject	Core Discipline Specific Subject(s)	Interdisciplinary Elective Subject(s)
1	IKGPTU, Main Campus, Kapurthala	Management	Research Methodology	<ol style="list-style-type: none"> Accounting and Finance Marketing Management Human Resource Management 	<ol style="list-style-type: none"> Human Values and Professional Ethics
		Electrical Engineering		<ol style="list-style-type: none"> Renewable Energy Resources Power System Engineering Energy Management Engineering 	<ol style="list-style-type: none"> Waste Energy Management
		Electronics and Communication Engineering		<ol style="list-style-type: none"> Advanced Wireless Communication Advanced Communication Systems Advanced Digital Signal processing Real time concepts for Embedded systems Radiating Systems Microwave and Millimetre wave circuits Optical Communication Technology Optical Networks 	<ol style="list-style-type: none"> Internetworking MEMS Network Security and Cryptography Mobile Computing Technologies Data Warehousing and Data Mining Neural Networks and Fuzzy Logic Mathematical Foundation of Computer Networks Adhoc Wireless and Sensor Networks Sensors for Ranging and Imaging
		Chemistry		<ol style="list-style-type: none"> Advanced Organic Chemistry 	<ol style="list-style-type: none"> Laboratory Practices and Safety
		Food Science and Technology		<ol style="list-style-type: none"> Advances in Food Processing Technology Advances in Food Analysis Advances in Food Packing Processing Technology for Bioactive Compounds 	<ol style="list-style-type: none"> Intellectual Property Rights Product Design & Development Project Planning & Implementation Food Supply Chain Management
		Computer Science & Engineering and Computer Applications		<ol style="list-style-type: none"> Soft Computing 	<ol style="list-style-type: none"> Advance Data Communication
		Mathematics		<ol style="list-style-type: none"> Continuum Mechanics Advanced Analysis Advanced Number Theory Advanced Numerical Analysis 	<ol style="list-style-type: none"> Methods in Applied Mathematics
		Environment Sciences		<ol style="list-style-type: none"> Recent Advances in Environmental Science 	<ol style="list-style-type: none"> Soil and the Environment
		Journalism and Mass Communication		<ol style="list-style-type: none"> Communication Theories Relevant Knowledge in Area of Research/Seminar 	<ol style="list-style-type: none"> Computer Applications
Mechanical Engineering	<ol style="list-style-type: none"> Non-Conventional Machining 	<ol style="list-style-type: none"> Production Engineering 			

		Biotechnology		<ol style="list-style-type: none"> 1. Biochemical and Separation Techniques 2. Bioprocess Technology 3. Recombinant Biotechnology 4. Plant Tissue Culture 	<ol style="list-style-type: none"> 1. Modern Pharmaceutical Analytical Techniques 2. Intellectual Property Rights 3. Pharmacological and Toxicological Screening Methods
		English		<ol style="list-style-type: none"> 1. Critical Approaches to Literature 2. Stylistics, ELT & Narratology 3. Preparation & Presentation of Research Proposals 4. Applied Research Methodology 	<ol style="list-style-type: none"> 1. Communication Studies 2. Literature Mass Media
2	ACET, Amritsar	Civil Engineering	Research Methodology	<ol style="list-style-type: none"> 1. Pavement Design, Construction and Maintenance 	<ol style="list-style-type: none"> 1. Civil Engineering applications of remote sensing and GIS
		Computer Science & Engineering		<ol style="list-style-type: none"> 1. Network Security and cryptography 2. Soft Computing 	<ol style="list-style-type: none"> 1. Mathematical Foundations of Computer Networks
		Mechanical Engineering		<ol style="list-style-type: none"> 1. Composite Materials 2. Advanced Thermodynamics 	<ol style="list-style-type: none"> 1. Mechatronics
		Electronics and Communication Engineering		<ol style="list-style-type: none"> 1. Advanced Wireless Communication 2. Advanced Communications system 3. Optical Communication Technology 	<ol style="list-style-type: none"> 1. Adhoc Wireless and Sensor Networks
3	DAVIET, JALANDHAR	Civil Engineering	Research Methodology	<ol style="list-style-type: none"> 1. Transportation and Highway Technology 2. Foundation Design and Construction 3. Environment Engineering and Management 4. Pavement Design, Construction and Maintenance 5. Bridge Engineering 6. Advanced Construction Technology 7. Advanced Structural Engineering 8. Hydraulics Engineering 9. Geotechnical Engineering 	<ol style="list-style-type: none"> 1. Disaster Management. 2. Civil Engineering applications of remote sensing and GIS. 3. Advanced Geoinformatics 4. Computer Aided Design Methods
		Mechanical Engineering		<ol style="list-style-type: none"> 1. Non-Conventional, Machining 2. Composite Materials 3. Tribology 	<ol style="list-style-type: none"> 1. Production Engineering 2. Product Design and Development
		Electrical Engineering		<ol style="list-style-type: none"> 1. Renewal Energy Resources 	
		Electronics and Communication Engineering		<ol style="list-style-type: none"> 1. Advanced Wireless Communication 2. Advanced Communication Systems 3. Advanced Digital Signal processing 4. Real time concepts for Embedded systems 5. Optical Communication Technology 6. Optical Networks 7. Advanced Data Communication 8. Image and Video Processing 9. Bio-Medical Signal Processing 10. RF & Microwave System Design 	<ol style="list-style-type: none"> 1. Internetworking 2. Neural Networks and Fuzzy Logic 3. Adhoc Wireless and Sensor Networks

				11. Coding Theory and Techniques	
		Computer Sciences & Engineering		1. Advance Software Engineering 2. Soft Computing	1. Optimization Techniques 2. Adhoc Wireless and Sensor Networks
4	Institute of Engineering and Technology, Bhaddal	Mechanical Engineering	Research Methodology	1. Non-Conventional Machining 2. Composite Materials	1. Production Engineering 2. Optimization Technique
		Computer Sciences & Engineering		1. Advanced Information Security 2. Advance Software Engineering 3. Advance Operating Systems	1. Adhoc Wireless and Sensor Networks
		Management		1. Accounting and Finance 2. Marketing Management 3. Human Resource Management	1. Business Communication Corporate Finance & Indian Financial System 2. Financial Management 3. Financial Institutions & Markets 4. Investment Analysis and Portfolio Management 5. Financial Reconstruction & Corporate Reporting 6. Consumer Behaviour Services Marketing 7. Retail Management Employee 8. Relations/Industrial relations 9. International Human Resource Management 10. Business Communication for Managerial Effectiveness
5	ISF College of Pharmacy, Moga	Pharmacy	Research Methodology	1. Pharmaceutics 2. Pharmaceutical Chemistry 3. Pharmacology 4. Pharmacognosy 5. Plant Tissue Culture	1. Modern Pharmaceutical Analytical Techniques 2. Intellectual Property Rights 3. Pharmacological and Toxicological Screening Methods
6	Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy, Bela	Pharmacy	Research Methodology	1. Pharmaceutics 2. Pharmaceutical Chemistry 3. Pharmacology 4. Pharmacognosy	1. Modern Pharmaceutical Analytical Techniques 2. Intellectual Property Rights 3. Pharmacological and Toxicological Screening Methods
		Civil Engineering.		1. Transportation and Highway Technology 2. Foundation Design & Construction 3. Environment Engineering & Mgt. 4. Pavement design construction & maintenance. 5. Bridge Engineering 6. Advanced Construction Technology 7. Advanced Structural Engineering 8. Geotechnical Engineering	1. Computer Aided Design and Methods

7	Guru Nanak Dev Engineering College, Ludhiana	Mechanical Engineering	Research Methodology	<ol style="list-style-type: none"> 1. Non-Conventional Machining 2. Computer Aided Design 3. Tribology 4. Advanced Thermodynamics 	<ol style="list-style-type: none"> 1. Production Engineering 2. Material Handling Equipment Design
		Electronics & comm. Engineering		<ol style="list-style-type: none"> 1. Radiating systems 2. Advanced data communications 	<ol style="list-style-type: none"> 1. Data warehousing & Data Mining
		Electrical Engineering		<ol style="list-style-type: none"> 1. Power System Engineering 2. Energy Mgt. Engineering 3. Renewal Energy Resources 	<ol style="list-style-type: none"> 1. Communication Systems
		Computer Science & Engg.		<ol style="list-style-type: none"> 1. Advanced concepts in image processing 2. Advanced software Engineering 3. Soft Computing 4. Data warehousing & Data Mining 	<ol style="list-style-type: none"> 1. Advanced data Communication
8	Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib	Computer Science & Engg.	Research Methodology	<ol style="list-style-type: none"> 1. Advanced Information Security 2. Advance Software Engineering 3. Advance Operating Systems Advanced Database Systems 4. Big Data Analytics 5. Advanced Data Structures and Algorithms 6. Network Security and Cryptography 7. Cost Management of Engineering Projects 	<ol style="list-style-type: none"> 1. Advanced Data Communication 2. Internetworking 3. Adhoc Wireless and Sensor Networks
		Electrical Engineering		<ol style="list-style-type: none"> 1. Power system Quality & Assessment 	<ol style="list-style-type: none"> 1. Renewal Energy Resources
		Mechanical Engineering		<ol style="list-style-type: none"> 1. Composite Material 	<ol style="list-style-type: none"> 1. Production Engineering
		Mathematical Sciences		<ol style="list-style-type: none"> 1. Advanced Numerical Methods 2. Methods in Applied Mathematics 3. Operations Research/Advanced Operations Research 	<ol style="list-style-type: none"> 1. Methods in Applied Mathematics
		Electronics & comm. Engineering		<ol style="list-style-type: none"> 1. Optical Networks 2. Internetworking 	<ol style="list-style-type: none"> 1. Neural Networks and Fuzzy Logic 2. Adhoc Wireless and Sensor Networks