



Koneru Lakshmaiah Education Foundation

(Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Pre - PhD Course Equivalence

As Per the UGC Guidelines Point No: 7 of 2016 regulation, the Pre PhD - Course work (Credits from min 8 to max 16) need to be fulfilled by attending 30 hrs course work and by clearing the written examination or by attaining NPTEL certification (Swayam) for paper - 2 and paper - 3.

Ph.D. students registered with KLEF can write Pre PhD examination (Paper1: Research Methodology (RM), Paper - 2 and Paper - 3 based on the notification from exam section or through NPTEL certification (Paper - 2 and Paper - 3 only) as per the given guidelines. Research Methodology (RM) should be written offline at university campus only and no exemption and equivalence is provided for RM courses.

1. Scholar can register in NPTEL (Swayam) for paper - 2 and paper - 3 as per the list of Pre PhD subjects mentioned below and at www.kluniversity.in
2. NPTEL (Swayam) courses will be treated as equivalent to the written examination conducted by KLEF and a minimum percentage of 60 will be considered equivalence to 3 credits.
3. Scholars need to submit the proof of NPTEL course registration, exam registration, hall ticket and course completion certificates to Dean R&D office for verification and the same shall be authorized by controller of examinations for final approval.
4. The Pre PhD examinations will be conducted twice every year as per the schedule (odd semester in August month & even semester in February month respectively).

Pre – PhD Online Learning Courses				
Department	Paper - 2		Paper - 3	
	Course Code	Course Title	Course Code	Course Title
Bio-Technology	21BT201	Bioanalytical Techniques	21BT301	Plant Biotechnology
			21BT302	Genetic Engineering
			21BT303	Microbial Technology
			21BT304	Biochemistry
			21BT305	Molecular Modeling and Drug Design
			21BT306	Bioprocess Engineering
			21BT307	ImmunoTechnology
			21BT308	Microbial Technology
			21BT309	Nanobiotechnology And Nanomedicine
	Civil Engineering	21CE201	Sustainable Construction Materials and Methods	21CE301
21CE202		Finite Element Analysis	21CE302	Advanced Design of Structures
21CE203		Optimization Techniques	21CE303	Advanced Structural Mechanics
21CE204		Structural Dynamics	21CE304	Remote Sensing and Geographic Information System
21CE205		Advanced Wastewater Treatment	21CE305	Surfaces Hydrologic Systems
21CE206		Water Quality and Environment	21CE306	River Hydraulics
21CE207		Hydrologic Elements and Analysis	21CE307	Watershed and Wetland Management
21CE208		Geosynthetics	21CE308	Ground Improvement Techniques
21CE209		Geotechnical Earthquake Engineering	21CE309	Pavement Construction and Management
21CE210		Traffic Engineering	21CE310	Environmental Impact Assessment
Commerce & Management	21MGMT201	Introduction to Organization	21MGMT301	Advanced Management Theory and Practice
	21MGMT202	Marketing Management	21MGMT302	Financial Services and Markets
	21MGMT203	Financial Management	21MGMT303	Healthcare Management
	21MGMT204	Human Resource management	21MGMT304	Supply Chain Management
			21MGMT305	Retail Marketing
			21MGMT306	Rural Marketing
			21MGMT307	Services Marketing
			21MGMT308	Introduction to Indian Banking System
			21MGMT309	Learning & Development
			21MGMT310	Organization Change and Development
			21MGMT311	Human Resource Development



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Department	Paper - 2		Paper - 3	
	Course Code	Course Title	Course Code	Course Title
Computer Science Engineering	21CS201	Information Retrieval System	21CS301	Big Data Analytics
	21CS202	Data Ware Housing and Mining	21CS302	Cloud Computing
	21CS203	Computer Networks	21CS303	Distributed Databases
	21CS204	Data Center Virtualization	21CS304	Research Foundations for Pattern Recognition
	21CS205	Network Security	21CS305	Soft Computing
	21CS206	Evolution of Architectures	21CS306	Software Engineering
	21CS207	Software Testing and Quality Assurance	21CS307	Cryptography & Network Security
	21CS208	Foundations of Data Science for Extensive Research	21CS308	Web Security
	21CS209	Advanced Data Structures	21CS309	Wireless Sensor Networks
	21CS210	Digital Image Processing	21CS310	Software Project Management
	21CS211	Bio Informatics	21CS311	Artificial Intelligence
	21CS212	Software Reliability	21CS312	Virtual and Augmented Reality
	21CS213	Deep Learning	21CS313	Data Security & Privacy
	21CS214	Distributed Computing	21CS314	Wireless Communication and Mobile Computing
	21CS215	Mobile Cloud	21CS315	Parallel Algorithms
	21CS216	Financial Engineering & Business Intelligence	21CS316	Blockchain and Cryptocurrencies
	21CS217	Quantum computing	21CS317	Machine Learning
	21CS218	Object Oriented Analysis and Design	21CS318	Speech Processing
	21CS219	Advances in Computing	21CS319	Natural Language Processing
	21CS220	Signal Processing	21CS320	Cloud Security
	21CS221	Artificial Neural Networks	21CS321	Cognitive Computing
	Electrical & Electronics Engineering	21EE201	Smart Meters and Smart Cities	21EE301
21EE202		Charging Station for Electric Vehicles	21EE302	Battery Management System for Electric Vehicles
21EE203		Facts Devices	21EE303	Power Quality
21EE204		Real Time Control of Power Systems	21EE304	Adaptive Control Systems
21EE205		Renewable Energy Sources and Integration	21EE305	Digital Protection of Power Systems
21EE206		IoT For Industrial Automation	21EE306	AI Techniques in Power Systems
21EE207		Advanced Power Converters	21EE307	Advanced Electrical Drives
Electronics & Communication Engineering	21EC201	Global Positioning Systems	21EC301	Bio Medical signal Processing
	21EC202	Machine Learning	21EC302	Advanced Embedded Processor Architecture
	21EC203	Embedded Networking	21EC303	Wireless Cellular Communications
	21EC204	Modern Digital Communication	21EC304	Natural Language Processing
	21EC205	Soft Computing	21EC305	Advanced Computational Mathematics
	21EC206	Digital Video Processing	21EC306	EMI/EMC
	21EC207	Radiating systems	21EC307	MEMS Measurement Techniques
	21EC208	Micro Electromechanical Systems	21EC308	Antenna Measurements
	21EC209	RF & Microwave System Design	21EC309	VLSI System Design
	21EC210	Low Power VLSI Circuits	21EC310	MOS Circuit Design
	21EC211	Detection and Estimation of Signals	21EC311	Testing of VLSI Circuits
	21EC212	Adaptive Signal Processing	21EC312	Advanced Analog IC Design
	21EC213	Real Time Concepts for Embedded Systems	21EC313	Microwave and Millimeter wave Circuits
	21EC214	Image Processing and Computer Vision	21EC314	Pattern Recognition
	21EC215	ASIC Design Flow	21EC315	CMOS RF Circuit Design
Electronics & Computer Engineering	17EM201	Networking of Embedded Systems	17EM301	Architecture Design for Advanced Embedded Processors
	17EM202	Real Time Scheduling Concepts for Embedded Systems	17EM302	Embedded Linux and basics of Device Drivers
	17EM203	System Design using Hardware Description Language	17EM303	FPGA Architectures and Applications
	17EM204	Design of VLSI Systems	17EM304	ASIC Design
	17EM205	Computer Networks	17EM305	Networks for Wireless Sensors
	17EM206	Principles of Network Security	17EM306	Web Security and Privacy Issues
	17EM207	Advancements in Computing	17EM307	Cloud Computing
	17EM208	Artificial Intelligence	17EM308	Machine Learning
	17EM209	Principles of Mobile Cloud	17EM309	Cloud Security



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Pre – PhD Online Learning Coursers

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	Course Code	Course Title	Course Code	Course Title
Electronics & Computer Engineering	17EM210	Cryptography & Network Security	17EM310	Mobile & ADHOC Networks
	17EM211	Wireless Technologies for IOT	17EM311	IoT Application Development through Python
	17EM212	Fundamentals IoT	17EM312	IoT Architectures and Programming
	17EM213	Fundamentals of Cyber Security	17EM313	Sensor Networks Programming
	17EM214	Neural Networks	17EM314	Fuzzy Logic
	17EM215	Sensors and Sensing Principles	17EM315	Pattern Recognition
	17EM216	Digital Video Processing	21ENG301	Indian writing in Translation
English	21ENG201	Indian Writing in English	21ENG302	Indian Women writers in English
	21ENG202	Commonwealth Literature	21ENG303	Indian Criticism and Rhetoric
	21ENG203	British Literature	21ENG304	English Literary Criticism
	21ENG204	American Literature	21ENG305	Contemporary English Writings
	21ENG205	History of English Language and Linguistics	21ENG306	Afro-American Literature
	21ENG206	Trends and Movements in English Literature	21ENG307	Aboriginal Literature
	21ENG207	Soft Skills	21ENG308	Black Literature
	21ENG208	Comparative Literature	21ENG309	Afro-American Women writers
	21ENG209	Culture and Media Studies	21ENG310	New Emerging trends in ELT- Essentials of Language Teaching
	21ENG210	Dalit Literature	21ENG311	Communication Skills-English for Specific Purposes
	21ENG211	Non-Fiction Literature	21ENG312	Dalit Novel
Law	17LW2001	Indian Penal Code	17LW3001	Procedure Code
	17LW2002	Constitutional Law of India 1	17LW3002	Constitutional Law of India 2
	17LW2003	Administrative Law	17LW3003	Alternative Dispute Resolution
	17LW2004	Law of Contracts	17LW3004	Company Law
	17LW2005	Intellectual Property Laws	17LW3005	Corporate and Security Laws
	17LW2006	Banking and Negotiable Instrument Act	17LW3006	Environmental Law
	17LW2007	Juvenile Justice	17LW3007	Law of Insurance
	17LW2008	Women and Law	17LW3008	Cyber Law
	17LW2009	Insolvency and Bankruptcy Code	17LW3009	Criminology, Penology and Victimology
	17LW2010	Land Laws	17LW3010	Law of Taxation
Mathematics	21MAT201	Topology	21MAT301	Fluid Dynamics
	21MAT202	Numerical Methods	21MAT302	Fluid Mechanics
	21MAT203	Time Scale Calculus	21MAT303	Tribology of Bearings
	21MAT204	Number Theory	21MAT304	Fuzzy Algebra
	21MAT205	Special Functions	21MAT305	Functional Analysis
	21MAT206	Boundary Value Problems	21MAT306	Semi Groups
	21MAT207	Distribution and Estimation Theory	21MAT307	Dynamical Systems on Time scale
	21MAT208	Mathematical methods & Stochastic processes	21MAT308	Differential Equations
	21MAT209	Statistical Inference	21MAT309	Cryptography
			21MAT310	Hyper Geometric Functions and Lie groups
			21MAT311	Queueing Theory
			21MAT312	Sampling Theory
			21MAT313	Differential Geometry
			21MAT314	Inventory Model
			21MAT315	Difference Equations
Pharmacy	16PH201	Modern Analytical Techniques	16PH301	Advances in Pharmaceutical Technology
			16PH302	Advanced Pharmacology
			16PH303	Advanced Pharmacognosy & Phytochemistry
			16PH304	Advanced Pharmaceutical Analysis
			16PH305	Advances Medicinal Chemistry



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Physics	21PHY201	Spectroscopic Studies on Transition Metal Ions	21PHY301	Spectroscopic Studies on Rare Earth Ions
	21PHY202	Nano Science and Technology	21PHY302	Solid State Ionics
	21PHY203	Remote Sensing Techniques	21PHY303	Upper Atmospheric Science
	21PHY204	Nuclear Physics-I	21PHY304	Nuclear Physics -II
	21PHY205	Liquid Crystals-I	21PHY305	Liquid Crystals-II
	21PHY206	Physics of Solar Cells	21PHY306	Thin Film Technology and Applications
			21PHY307	Molecular Modeling
			21PHY308	Aeronomy
			21PHY309	Advanced Solar Storage Technologies Energy
Mechanical Engineering	20ME201	Numerical Methods in Thermal Engineering	20ME301	Incompressible and Compressible Flows
	20ME202	Advanced Thermodynamics	20ME302	Computational Fluid Dynamics
	20ME203	Design of Thermal Systems	20ME303	Refrigeration and Cryogenics
	20ME204	Advanced Heat and Mass Transfer	20ME304	Measurements in Thermal Engineering
	20ME205	Heat Exchanger Design	20ME305	Engine Systems and Performance
	20ME206	Convection and Two-Phase Flow	20ME306	IC Engine Combustion and Pollution
	20ME207	Compact Heat Exchangers	20ME307	Alternative Fuels
	20ME208	Principles of Turbomachinery	20ME308	Energy Conservation, Management & Audit
	20ME209	Gas Turbine Engineering	20ME309	Renewable Energy Technology
	20ME210	Turbo-Compressors	20ME310	Solar Energy and Wind Energy
	20ME211	Design Methods	20ME311	Mechanical Vibrations
	20ME212	Design With Advanced Materials	20ME312	Design for Optimization
	20ME213	Theory of Elasticity and Plasticity	20ME313	Advanced Strength of Materials
	20ME214	Modeling & Analysis-1 (Cad)	20ME314	Modeling & Analysis-2 (FEM)
	20ME215	Precision and Quality Engineering	20ME315	Design of Pressure Vessels and Plates
	20ME216	Advanced Mechanisms	20ME316	Tribological System Design
	20ME217	Concurrent Engineering	20ME317	Product Design and Development
	20ME218	Mechanics of Composite Materials	20ME318	Engineering Noise & Control
	20ME219	Machine Tool Design	20ME319	Engineering Failure Analysis and Prevention
	20ME220	Fracture Mechanics	20ME320	Design for Manufacturing, Assembly and Environment
	20ME221	Advanced Composites	20ME321	Experimental Stress Analysis
	20ME222	Quality Engineering and Reliability	20ME322	Micro and Nano Manufacturing
	20ME223	Intelligent Manufacturing Systems	20ME323	Additive Manufacturing for Medical Applications
	20ME224	Quality Engineering in Manufacturing	20ME324	Computer integrated Manufacturing
	20ME225	Operational Planning and Control	20ME325	Supply Chain Management
	20ME226	Condition Monitoring and Fault Diagnosis	20ME326	Advanced Optimization Techniques
	20ME227	Energy Systems Modelling and Analysis	20ME327	Materials Management
	20ME228	Fundamentals of Mechatronics	20ME328	Fuels and Combustion Technology
	20ME229	Advanced Engineering Mathematics	20ME329	Control of Mechatronic Systems
	20ME230	Robotic Modeling Analysis and Control	20ME330	Robotics: Advanced Concepts and Analysis
	20ME231	Modeling and Simulation of Mechatronic Systems	20ME331	Mechatronics Product Design
	20ME232	Signal Processing in Mechatronic Systems	20ME332	Vehicle Dynamics and Multi-Body Systems
	20ME233	MEMS and NEMS	20ME333	AI for Robotics
	20ME234	Intelligent Visual Surveillance	20ME334	Sensors and Actuators
	20ME235	Microprocessors and Embedded Systems	20ME335	Industrial Automation and Control
	20ME236	Fuzzy Sets and Artificial intelligence		
	20ME237	Emerging Smart Materials for Mechatronics Applications		

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