



UNDER GRADUATES

III SEM

MATHEMATICS III: BEELE301T

Year of Study 2017-2018

- CO [1]: Study of Laplace transform.
- CO [2]: Study of Fourier series & Fourier transform.
- CO [3]: Study of calculus of variations.
- CO [4]: Study of functions of complex variable.
- CO [5]: Study of partial differential equations.
- CO [6]: Study of matrices.

NON CONVENTIONAL ENERGY SOURCES III: BEELE302T

Year of Study 2017-2018

- CO [1]: Learn fundamentals of solar radiation geometry, application of solar energy.
- CO [2]: To analyze the motions of mechanisms, design mechanisms to give desired motions, Selection of sites for wind farm, different types of wind generators.
- CO [3]: Understand the basic of small hydro, ocean & wave energy.
- CO [4]: Understand the basic of other non conventional energy sources.
- CO [5]: Understand the basic of BIO Mass and Geothermal Energy.

ELECTRICAL MEASUREMENT AND INSTRUMENTATION III: BEELE303T

Year of Study 2017-2018

- CO [1]: Student has understood the details of different electrical instrument used for electrical measurement And Instrumentation.
- CO [2]: Students has understood the details of different Bridges used for measurement of R, L and C.
- CO [3]: Students have understood the details of different types of potentiometers and CT and PT.
- CO [4] The basic idea about transducer and Measurement of acceleration, velocity Measurement of angular velocity, Torque and Power measurement Torque meter.
- CO [5]: The basic idea about Measurement of temperature using thermistor, RTD and thermocouple and Two colour pyrometers, Optical pyrometer.

NETWORK ANALYSIS: BEELE304T

Year of Study 2017-2018

- CO [1]: Apply node and loop (mesh) analysis.
- CO [2]: Apply phasor analysis to AC circuits in sinusoidal steady state.
- CO [3]: Use various network theorems for analysis and design of electric circuit.
- CO [4]: Analyze periodic inputs to electric circuits using Fourier series and their response.
- CO [5]: Compute initial and final conditions for current and m voltage in first and second order circuits.
- CO [6]: Determine the response of a circuit excited by a waveform composed of various step and ramp components.
- CO [7]: Characterize two – port networks by z, y, t and h parameters.

ELECTRONIC DEVICES & CIRCUITS: BEELE305T**Year of Study 2017-2018**

CO [1]: Principle & working of basic semiconductor devices, Transistors, amplifiers, FET & MOSFETS.

CO [2]: Conversion of numbers from one code to other code.

CO [3]: Logic gates and truth tables of digital circuits.

V SEM**ELECTRICAL POWER SYSTEM-I: BEELE501T****Year of Study 2017-2018**

CO [1]: Modeling and representation of the system components used in power system.

CO [2]: Concept of designing transmission line parameters.

CO [3]: The basic concept of load flow analysis.

UTILIZATION OF ELECTRICAL ENERGY: BEELE502T**Year of Study 2017-2018**

CO[1]: Understand applications for heating, welding, illumination using electric power.

CO[2]: Understand applications for fan, lowers, compressor, pumps and refrigeration using electric power.

ELECTRICAL MACHINE DESIGN: BEELE503T**Year of Study 2017-2018**

CO [1]: Select proper material for design of a machine.

CO [2]: Design a overall transformer and estimates its performance characteristics as per requirement and Constraints specified.

CO [3]: Design rotor core of Induction motor.

CO [4]: Design overall dimensions of synchronous machines.

MICROPROCESSOR & INTERFACING: BEELE504T**Year of Study 2017-2018**

CO [1]: VLSI circuit concept.

CO [2]: Introduction to Intel 8085A architecture.

CO [3]: Programming instructions.

CO [4]: Interrupts.

CO [5]: Methods of data transfer.

CO [6]: Hardware and Interface.

ELECTRICAL MACHINE-II: BEELE505T**Year of Study 2017-2018**

CO [1]: The student has understood principle, construction, laying of armature and field windings, types, generation emf of synchronous generators.

CO [2]: The student has understood steady state and transient behaviour of synchronous generators.

CO [3]: The student has understood synchronization and parallel operation of synchronous generators.

CO [4]: The student has understood principle, construction, methods of starting of synchronous motor, its operation with variable load, operation with variable excitation, performance evaluation.

CO [5]: The student has understood special motors, like Repulsion, Hysteresis, Reluctance, Universal and Schrage motors.

CO [6]: The Student has understands the MATLAB based Synchronous machine operation.

VII SEM

CONTROL SYSTEM-II: BEELE701T

Year of Study 2017-2018

CO [1]: Analyze the practical system for the desired specifications through classical and state variable approach.

CO [2]: Design the optimal control with and without constraints.

CO [3]: Analyze non-linear and work with digital system and their further research.

ELECTRICAL POWER SYSTEM-II: BEELE702T

Year of Study 2017-2018

CO [1]: Understand the basics of power system.

CO [2]: Analyze and solve problems on symmetrical & Unsymmetrical fault, stability.

CO [3]: Understand economy of operation and get familiar with types of grounding.

I.T. & ITS APPLICATIONS IN POWER SYSTEM CONTROL: BEELE703T

Year of Study 2017-2018

CO [1]: Understand the communication used for automation.

CO [2]: Understand the various aspects of energy auditing in industry

CO [3]: Do the networking of communication in industry with instrumentation and microprocessors.

FUZZY LOGIC & NEURAL NETWORK: BEELE703T

Year of Study 2017-2018

CO [1]: Understand the fundamentals of fuzzy logic and ANN.

CO [2]: Learn different neural networks

CO [3]: Learn concepts of Associative memories and self organizing network.

FLEXIBLE AC TRANSMISSION SYSTEMS: BEELE703T

Year of Study 2017-2018

CO [1]: Ability to understand and identify the problems and constraints with stability of large interconnected System.

CO [2]: Ability to understand different types of converters, regulators and compensator.

ENERGY MANAGEMENT & AUDIT: BEELE703T

Year of Study 2017-2018

CO [1]: Know Present energy scenario with need of energy audit and energy conservation.

CO [2]: Understand various aspects of energy audit such as planning, monitoring and implementation.

CO [3]: Manage electric and thermal energy in the industry.

HIGH VOLTAGE ENGINEERING: BEELE704T

Year of Study 2017-2018

CO [1]: Students has understood breakdown mechanism in solid liquid and gaseous medium.

CO [2]: Students has understood lightening and switching over-voltages

CO [3]: Students has understood insulation coordination. And related methodology.

CO [4]: Students have knowledge of different methods of generation of high voltage and currents in laboratory.

CO [5]: Students have knowledge of different methods of measurement of high voltage and currents in laboratory

CO [6]: Students have knowledge different methods of non destructive and High Voltage testing of apparatus.

ELECTRICAL INSTALLATION DESIGN: BEELE704T**Year of Study 2017-2018**

CO [1]: The students will understand concept of load forecasting, solve problems based on regression analysis.

CO [2]: The students will be able to draw single line diagrams with specifications for electrical distribution networks for residential and commercial installations.

CO [3]: The students will be able to draw single line diagrams with specifications for distribution networks, motor and power control centres for industrial installations and design reactive power compensation.

CO [4]: Students shall be able to understand procedure for receipt, storage, testing and commissioning of transformers along with its accessories viz OTI, WTI, Silica Gel Breather, MOG, Buchholz relay etc .

CO [5]: Students shall be able to design 11kV and 33 kV substations for utility and industrial installations and specify the ratings and specifications of apparatus used

EVEN SEM**IV SEM****MATHEMATICS-IV: BEELE401T****Year of Study 2017-2018**

CO [1]: Study of mathematical modelling and transfer function.

CO [2]: Study of z-transform.

CO [3]: Study of fuzzy sets and fuzzy logic.

CO [4]: Study of numerical methods-i.

CO [5]: Study of numerical methods-ii.

CO [6]: Study of theory of probability.

ELEMENTS OF ELECTROMAGNETICS: BEELE402T**Year of Study 2017-2018**

CO [1]: To study the fundamentals of mechanical engineering such as machine tools and metal is cutting.

CO [2]: Apply various laws in the analysis of electromagnetic systems.

CO [3]: Understand the physical basis for the functioning of circuit elements

CO [4]: Apply Electromagnetic boundary conditions.

CO [5]: Be familiar with the four Maxwell's equations used to study time varying electromagnetic or dynamic fields.

CO [6]: Understand the concept of uniform plane-wave propagation and electromagnetic power density flow in lossless medium.

DIGITAL & LINEAR ELECTRONIC CIRCUIT: BEELE403T**Year of Study 2017-2018**

CO [1]: Basic fundamentals of logic gates, Flip flops, timers.

CO [2]: Basic Operational amplifier circuits.

CO [3]: Simple linear circuit.

CO [4]: Applications of Operational amplifier.

CO [5]: Study of Linear ICS.

ELECTRICAL MACHINE-I: BEELE404T**Year of Study 2017-2018**

CO[1]: Principle, construction, connections, vector grouping, operation and testing of 3-phase transformer.

CO[2]: Conversion of 3-phase supply to 2-phase supply, parallel operation of 3-ph. Transformers.

CO[3]: Principle, armature and field construction, types, operation characteristics, armature reaction, commutation, methods to improve commutation in dc generators.

CO[4]: Principle, types, voltage build up, performance characteristics, torque evaluation in dc motors

CO[5]: Principle, construction, types, torque development, performance characteristics, tests to determine performance indices & parameters of equivalent circuit of 3-phase and double cage induction motors, methods of starting, speed control and braking of induction motors.
CO [6]: Revolving and cross field theories, operation, characteristics, types, equivalent circuit & tests.

COMPUTER PROGRAMMING: BEELE405T

Year of Study 2017-2018

CO[1]: Create awareness about economics terminology and business organization General information of computers and operating systems
CO[2]: Structure of "C" program, Data types, Storage class, variables, expressions and Operators
CO[3]: Use of arrays and sorting techniques
CO[4]: Pointers and structures.
CO[5]: Basics of strings and arrays
CO[6]: C++ concepts
CO[7]: Matrix operation using programming.
CO[8]: Use of graphic tools for presentation

ENVIRONMENTAL STUDIES: BEELE406T

Year of Study 2017-2018

CO [1]: To Understand the Ecosystem.
CO [2]: To Understand the Environmental issues related with social and human population.
CO [3]: To Understand the Biodiversity and its conversion.

VI SEM

POWER STATION PRACTICES: BEELE601T

Year of Study 2017-2018

CO [1]: TO understand the basic parameters of power plant Engineering.
CO [2]: To understand the Thermal power Plant.
CO [3]: To understand Hydro power plant.
CO [4]: To understand Nuclear power plant.
CO [5]: To calculate the tariff for different customers.
CO [6]: To understand co- generation and capacitive power generation.

**ENGINEERING ECONOMICS &
INDUSTRIAL MANAGEMENT: BEELE602T**

Year of Study 2017-2018

CO[1]: After the completion of course the students will be able to manage the thing economically
CO [2]: To understand the different depreciation method.
CO [3]: To understand the management function such as planning, organizing, directing, controlling and communicating.
Co[4]: To understand the budget and their importance.

ELECTRICAL DRIVES & THEIR CONTROL: BEELE603T

Year of Study 2017-2018

CO [1]: To solve numerical on starting, speed control and braking.
CO [2]: To solve numerical on heating and cooling of motors.
CO [3]: It will lay the foundation for studying the advanced subject Power Semiconductor based drives to be studied in 8th semester
CO [4]: To work on the drives used in the Industry.
CO [5]: Transient stability by using Euler's, Modified Euler's & RK-4th order differential method work with PLC's in the Industry
CO [6]: Will gain an insight in the working of drives used in traction.

ELECTRICAL WORKSHOP:**Year of Study 2017-2018**

- CO [1]: To have Knowledge of Basic Circuits Symbol in Electrical Workshop.
- CO [2]: To Determine Total Load of any Residential building.
- CO [3]: To Determine Total Load of any Commercial building
- CO [4]: To Estimate the basics requirement of earthing. .
- CO [5]: To Understand Basic Construction and Operation of Various Laboratory Equipments.
- CO [6]: To Perform basic maintenance and Troubleshooting of house hold equipment , energy saving etc.

POWER ELECTRONICS: BEELE604T**Year of Study 2017-2018**

- CO [1]: Understand basic operation of various power semiconductor devices.
- CO [2]: Understand the basic principle of switching circuits.
- CO [3]: Analyze and design an AC/DC rectifier circuit.
- CO [4]: Analyze and design DC/DC converter circuits.
- CO [5]: Analyze DC/AC inverter circuit.
- CO [6]: Understand the role power electronics play in the improvement of energy usage efficiency and the development of renewable energy technologies.

CONTROL SYSTEM-I: BEELE605T**Year of Study 2017-2018**

- CO [1]: Model the linear systems and study the control system components specifications through classical and state variable approach.
- CO [2]: Understand the time response and time response specifications.
- CO [3]: Analyze the absolute stability
- CO [4]: Analyse the relative stability through root locus method.
- CO [5]: Frequency response tools like bode plot and nyquist plot.
- CO [6]: Understand the introductory concepts of state variable approach.

VIII SEM**ENTREPRENEURSHIP DEVELOPMENT: BEELE801T****Year of Study 2017-2018**

- CO [1]: Ability to Understand Discrete time signals and system.
- CO [2]: Ability to Understand Use of Fourier and z-transform in analysis of discrete signals.
- CO [3]: Ability to Understand the Various filter design techniques use for discrete variables and discrete Fourier transform.

POWER QUALITY: BEELE801T**Year of Study 2017-2018**

- CO[1]: Ability to Understand Power quality standards for voltage sag, swell, distortions, flickers etc
- CO[2]: Ability to Understand Approach for power quality monitoring, assessment and mitigation.
- CO[3]: Ability to Understand the State variable model and harmonic estimation.

EHV AC & HVDC TRANSMISSION: BEELE801T**Year of Study 2017-2018**

- CO[1]: Ability to Understand to demonstrate the knowledge of Power handling capacity of different Transmission systems.
- CO [2]: Ability to Understand Electrostatic and electromagnetic fields and corona in EHVAC lines.
- CO[3]: Ability to Understand the Electrostatic and electromagnetic fields and corona in EHVAC lines.
- Co[4]: Ability to Understand the Voltage control and current control systems for power flow controls in HVDC system.

CO[5]: Ability to Understand the knowledge of design parameters of AC filters as well as DC filters and Reactive power compensation Overall knowledge about the HVDC system such as MTDC, protection and substation layout of HVDC power plant.

ADVANCED MICROPROCESSOR & PERIPHERALS: BEELE802T Year of Study 2017-2018

CO [1]: Ability to Understand to Microprocessor and microcontrollers with its architecture.
CO [2]: Ability to Understand Interfacing of microprocessor and microcontroller with its peripherals.
CO [3]: Ability to Understand the Concept of virtual memory and DoS structure.

POWER SEMICONDUCTOR BASED DRIVES: BEELE802T Year of Study 2017-2018

CO [1]: work with confidence on the various drives used in the Industry.
CO[2]: The students can carry research on the newer Switched Reluctance motor and Brushless DC motor.
CO [3]: Understands the traction drives with ac and dc motors.

ELECTRICAL DISTRIBUTION SYSTEM: BEELE802T Year of Study 2017-2018

CO [1]: Calculate different distribution factors.
CO [2]: Understand classification of load, types of load curves.
CO [3]: Control of voltage and reactive power in distribution system.
CO [4]: Understand distribution automation
CO [5]: Understand distribution substation layout with associated equipments.

SWITCH GEAR & PROTECTION: BEELE803T Year of Study 2017-2018

CO [1]: Theory & application of main components used in power system protection
CO [2]: Protection systems used for electric machines, transformers, bus bars, transmission lines.
CO [3]: Theory, construction, and applications of main types of circuit breakers.
CO [4]: Design the protection systems needed for each main part of a power system.
CO [5]: To Understand relay Characteristics Different relay.

COMPUTER APPLICATIONS IN POWER SYSTEM: BEELE804T Year of Study 2017-2018

CO [1]: Determine Bus Impedance & Admittance matrix (required for Load flow & Short circuit Studies) by graphically, Inspection & building algorithm.
CO [2]: Load flow study of a power system by Newton-Raphson & Gauss-Seidal Iterative Method.
CO [3]: Short circuit studies.
CO [4]: Transient stability by using Euler's, Modified Euler's & RK-4th order differential method.



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