



# LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### COURSE OUTCOME

(Academic Year: 2020-21 Odd Semester)

III Semester (OU)

Course Outcomes: **C214** Biology for Engineers

Student will be able to

CO. No.	Description	Bloom s Taxonomy Level
C214.1	Apply biological engineering principles, procedures needed to solve real world problems.	TL3, TL6
C214.2	Understand the fundamentals of living things, their classification, cell structure & biochemical constituents.	TL2
C214.3	Apply the concept of plant, animal & microbial systems & growth in real life situations.	TL3, TL6
C214.4	Comprehend the genetics and the immune system.	TL2, TL1.
C214.5	Know the cause, symptoms, diagnosis and treatment of common diseases.	TL2, TL1, TL4
C214.6	Apply basic knowledge of the application of biological systems in relevant industries	TL3, TL6

Course Outcomes: **C215** Engineering Mechanics

Student will be able to

CO. No.	Description	Bloom s Taxonomy Level
C215.1	Draw the free body diagram and determine the resultant and or moments	TL3
C215.2	Determine the centroid and second moment of area of different geometric sections	TL3
C215.3	Apply the laws of mechanics to determine the efficiency of simple machines with consideration of friction	TL3
C215.4	Analyze statically determinate planar frames	TL4
C215.5	Analyze the motion and calculate trajectory characteristics	TL4 & TL5
C215.6	Apply Newton's laws and elastic collisions and motion of rigid bodies	TL3

Course Outcomes: **C216** Energy Sciences and Engineering

Student will be able to

CO. No.	Description	Bloom s Taxonomy Level
C216.1	Understand the basics of various sources of energy	TL1, TL2
C216.2	Analyse the present status of conventional energy sources.	TL4
C216.3	Understand the working principles of Renewable Energy systems	TL3
C216.4	Design and develop waste heat recovery systems.	TL4, TL 5
C216.5	Relate energy economics, standards and future challenges	TL3

Course Outcomes: **C217** Electrical Circuit Analysis

Student will be able to

CO. No.	Description	Bloom s Taxonomy Level
C217.1	Analyze steady-state response of electrical circuits.	TL4

C217.2	Apply network theorems for the analysis of electrical circuits.	TL3
C217.3	Analyze solution of first and second order RL, RC and RLC networks.	TL4
C217.4	Apply Laplace transforms for electrical circuits	TL3
C217.5	Analyze the behavior of two port networks	TL4
C217.6	Analyze Network functions	TL4

Course Outcomes:**C218** Electromagnetic Fields

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C218.1	Understand the vector calculus for electromagnetism.	TL-2
C218.2	Obtain the electric fields for simple configurations under static conditions.	TL-3
C218.3	Analyse and apply the static magnetic fields.	TL-4
C218.4	Understand Maxwell's equation in different forms and different media	TL-2 , TL-4
C218.5	Understand the propagation of EM waves	TL-2

Course Outcomes:**C219** Analog Electronics

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C219.1	Obtain the the V - I characteristics of diode and analyze various diode applications like rectifiers and regulators.	T2,T1,T-4
C219.2	Analyze the construction & working of active devices like BJT & FET in various modes.	T3,T4
C219.3	Recognize the type of feedback and analyze its effect on amplifier characteristics and calculate the frequency of oscillation for different types of oscillator circuits.	T2,T1
C219.4	Calculate the frequency of oscillation for different types of oscillator circuits.	T1,T4
C219.5	Analyze and design different circuits using Ideal Op Amps; Design simple digital circuits using logic gates.	T2,T3

Course Outcomes:**C2110** Computer Aided Electrical

Drawing Lab

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C2110.1	Identify and draw different components of electrical systems	TL1, TL2
C2110.2	Draw different control and wiring diagrams	TL1, TL2
C2110.3	Draw winding diagrams of electrical machines	TL1, TL2
C2110.4	Draw different starter diagrams of A.C and D.C machine	TL1, TL2
C2110.5	Acquire knowledge on various Electrical Engineering Softwares	TL1

Course Outcomes:**C2111** Analog Electronics Lab

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C2111.1	Understand the characteristics of electronics devices Zener Diode in forward bias and reverse bias	TL1, TL2
C2111.2	Demonstrate FET and BJT characteristics. Design two stage RC coupled amplifier	TL1

C2111.3	Demonstrate OP-AMP and design monostable, astable, bistable multivibrator	TL1, TL2
C2111.4	Demonstrate different applications of diode- clipper, clamper	TL1, TL2
C2111.5	Analyse feedback amplifiers and op-amp oscillator circuits	TL1, TL2

**COURSE OUTCOME**  
**(Academic Year: 2020-21 Odd Semester)**  
**III Year -I Semester (R18)**

Course Outcomes:**C311** Power Electronics

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C311.1	Understand the characteristics and performance of various power electronic devices.	TL2
C311.2	Analyse single and three phase controlled rectifier circuits.	TL4
C311.3	Understand choppers circuits and AC voltage controllers	TL2
C311.4	Understand the performance of single phase inverter circuits.	TL2
C311.5	Analyse the operation of three phase voltage source inverters.	TL4
C311.6	Analyse single and three phase controlled rectifier circuits.	TL4

Course Outcomes:**C312** Power Systems – II

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C312.1	Analyze the performance of the transmission lines	TL4
C312.2	Understand the concepts of voltage control and compensating methods in power systems	TL2
C312.3	Understand the per unit representation of power system	TL2
C312.4	Examine the performance of the travelling waves	TL4
C312.5	Understand the methods of over voltage protection and insulation coordination in transmission lines	TL2
C312.6	Understand the symmetrical components and thereby analyze different faults that occur in transmission lines	TL2, TL4

Course Outcomes:**C313** Measurements and Instrumentation

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C313.1	Analyze the performance characteristics of each instrument.	TL3
C313.2	Illustrate basic meters such as voltmeters and ammeters.	TL4
C313.3	To Create students capable of analyzing and solving the varieties of problems and issues coming up in the vast field of electrical measurements.	TL1
C313.4	Explain the basic features of Bridges and different types of AC & DC Bridges.	TL5
C313.5	Apply the complete knowledge of various electronics instruments/transducers to measure the physical quantities in the field of science, engineering and technology	TL4
C313.6	Apply the knowledge of smart and digital metering for industrial applications	TL4

Course Outcomes:**C314** High Voltage Engineering

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C314.1	Analyze steady-state response of electrical Understand the basic physics related to various breakdown processes in solid, liquid and gaseous insulating materials.	TL4
C314.2	Knowledge of generation and measurement of D. C., A.C., & Impulse voltages	TL3
C314.3	Knowledge of how over-voltages arise in a power system protection against these over voltages. circuits..	TL3
C314.4	Knowledge of how to protect against these over voltages. circuits	TL2
C314.5	Knowledge of tests on H. V. equipment and on insulating materials, as per the standards	TL2, TL3
C314.6	Understand the Application of various insulating materials	TL3

Course Outcomes:**C315** Business Economics and Financial Analysis

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C315.1	student gets the knowledge of managerial economics	( TL1)
C315.2	Student should get knowledge of the basic terminology of economics	(TL3)
C315.3	Ability to get knowledge about the business entities	(TL3)
C315.4	students acquire knowledge of Business Forms.	(TL3)
C315.5	Students know about the types of ownerships.	(TL 3)
C315.6	Ability to acquire knowledge about the partnership and sole trader and joint stock company acts	(TL2)

Course Outcomes:**C316** Power System Simulation Lab

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C316.1	Perform various transmission line calculations	TL6
C316.2	Understand Different circuits time constants	TL2
C316.3	understand the concept high frequency transients	TL6
C316.4	Comparison of different transmission lines parameters	TL4
C316.5	perform parameter estimation and fault analysis on Transmission lines	TL6
C316.6	Analyze the experimental data and draw the conclusions	TL4

Course Outcomes:**C317** Power Electronics Lab

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C317.1	Understand the operating principles of various power electronic converters.	TL2
C317.2	Use power electronic simulation packages& hardware to develop the power converters.	TL2 , TL4
C317.3	Analyze and choose the appropriate converters for various applications	TL4
C317.4	Design the power converter with suitable switches meeting a specific load requirement.	TL5
C317.5	Apply Knowledge to Power electronic Converters with diffeent Applications	TL1, TL4

C317.6	Apply design knowledge to the Controllers	TL1
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Course Outcomes:C318 Measurements and Instrumentation Lab

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C318.1	Upon completion of study of the course should be able to calibrate and test single	TL6
C318.3	Student should be able to measure resistance, inductance and capacitance	TL5
C318.4	Students should be able to measure 3- $\Phi$ active power and reactive power	TL5
C318.5	Students should be able to test current transformers and dielectric strength of oil.	TL6
C318.6	Students should be able to calibrate LVDT and resistance strain gauge.	TL2 , TL4

Course Outcomes:C319 Advanced Communication Skills Lab

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C319.1	Acquire vocabulary and use it contextually	TL2,TL3
C319.2	Listen and speak effectively	TL3
C319.3	Develop proficiency in academic reading and writing	TL3, TL6
C319.4	Increase possibilities of job prospects	TL2, TL3
C319.5	Communicate confidently in formal and informal contexts	TL3
C319.6	Adopt professional behaviour and develop team spirit	TL3

#### COURSE OUTCOME

(Academic Year: 2020-21 Odd Semester)

IV Year -I Semester (R16)

Course Outcomes:C411 Power Semiconductor Drives

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C411.1	Able to compute inductance and capacitance for different configurations of transmission lines.	TL2
C411.2	Design the power converters suitable for particular applications	TL5
C411.3	Develop the novel control methodologies for better performance.	TL2 , TL 4
C411.4	Understand the basic knowledge of coppers	TL2
C411.5	Design the Single Phase Inverters	TL5
C411.6	Compute the Problems on voltage Conrol Techquies	TL3

Course Outcomes:C412 Power System Operation and control

Student will able to

CO. No.	Description	Bloom s Taxonomy Level
C412.1	Understand the load frequency control of power system	TL1, TL2
C412.2	Understand the concept of reactive power and voltage control in power system	TL1, TL2
C412.3	Analyze the optimal scheduling of power plants	TL2, TL3
C412.4	Understand and apply different methods to solve unit commitment problem	TL2, TL3, TL5
C412.5	Understand the concept of computer control of power systems and data acquisition.	TL1,TL2

Course Outcomes:**C413** HVDC Transmission

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C413.1	Understand the importance of Transmission power through HVDC.	TL2
C413.2	Analyse the HVDC Converter operation.	TL4
C413.3	Discuss firing angle control of 6 pulse,12 pulse circuits.	TL6
C413.4	Identify the importance of filters for HVDC system.	TL3
C413.5	Analyse the impact of AC system faults on DC system operation.	TL4

Course Outcomes:**C414** Power Quality

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C414.1	To understand various Power Electronics devices such as SCR, TRIAC, DIAC, IGBT, GTO etc	TL2
C414.2	To understand application of aforesaid Power Electronics devices in Choppers, Inverters and Converters etc.	TL2
C414.3	To understand control of Electrical Motors through DC-DC converters, AC Converters etc.	TL2
C414.4	To understand the use of Inductors and Capacitors in Choppers, Inverters and Converters.	TL2
C414.5	To understand the application of converters and applications.	TL2
C414.6	To understand the use of Inverters and Converters etc.	TL2

Course Outcomes:**C415** Special Machines

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C415.1	Knowledge on Special Types of DC Machines	TL1
C415.2	To use special machines as transducers for converting physical signals into electrical	TL2, TL3
C415.3	To use micro-processors for controlling different machines	TL2, TL4
C415.4	To understand the operation of different special machines	TL2
C415.5	To select different special machines as part of control system components	TL4,TL6
C415.6	Understand the concept of Linear Induction Motor	TL4

Course Outcomes:**C416** Electrical Systems Simulation Lab

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy</b>
C416.1	Design and Analyze electrical systems in time domain	TL5
C416.2	Design and Analyze electrical systems in frequency domain	TL5
C416.3	Analyze various transmission lines and perform fault analysis	TL4
C416.4	Model Load frequency control of Power Systems	TL6
C416.5	Design various Power Electronic Converters and Drives.	TL5

C416.6	Analyze the performance of DC Machines and Induction Motors	TL4
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Course Outcomes:**C417** Electrical Workshop

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C417.1	Get practical knowledge related to electrical	TL1
C417.2	Fabricate basic electrical circuit elements/networks	TL6
C417.3	Trouble shoot the electrical circuits	TL2,TL3
C417.4	Design filter circuit for application	TL6
C417.5	Get hardware skills such as soldering, winding etc.	TL2 , TL1
C417.6	Get debugging skills.	TL3

Course Outcomes:**C418** Industry Oriented Mini Project

Student will able to

<b>CO. No.</b>	<b>Description</b>	<b>Bloom s Taxonomy Level</b>
C418.1	Design identify basic requirements for a application and propose a cost effective solution	TL6 TL2
C418.2	Build knowledge through practical assignments and learn the various design methods for solving a problem analysis	TL6,TL5
C418.3	Develop skill to build design techniques for various problem analysis	TL6
C418.4	Summarize the fundamental concepts and techniques used in mini project	TL1
C418.5	Make up project enables the student to understand the business process	TL6