Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav School of Management

Choice Based Credit System (CBCS) in Light of NEP-2020
BBA+MBA - II SEMESTER (2022-2026)

ML307 ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
ML307	AECC	Environmental Management and Sustainability	60	20	20	0	0	4	0	0	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; **AECC**- Ability Enhancement Compulsory Course

***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objective

1. To create awareness towards various environmental problems.
2. To create awareness among students towards issues of sustainable development.
3. To expose students towards environment friendly practices of organizations.
4. To sensitize students to act responsibly towards environment.

Examination Scheme

The internal assessment of the students' performance will be done out of 40 Marks. The semester Examination will be worth 60 Marks. The question paper and semester exam will consist of two sections A and B. Section A will carry 36 Marks and consist of five questions, out of which student will be required to attempt any three questions. Section B will comprise of one or more cases / problems worth 24 marks.

Course Outcomes

1. The course will give students an overview of various environmental concerns and practical challenges in environmental management and sustainability.
2. Emphasis is given to make students practice environment friendly behavior in day-to-day activities.

COURSE CONTENT

UNIT I: Introduction to Environment Pollution and Control

1. Pollution and its types (Air, Water, and Soil): Causes, Effects and Control measures
2. Municipal Solid Waste: Definition, Composition, Effects
3. Electronic Waste: Definition, Composition, Effects
4. Plastic Pollution: Causes, Effects and Control Measures

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BBA+MBA - II SEMESTER (2022-2026)

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ML307	AECC	Environmental Management and Sustainability	60	20	20	0	0	4	0	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical: C - Credit; AECC- Ability Enhancement Compulsory Course

***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

UNIT II: Climate Change and Environmental Challenges

1. Global Warming and Green House Effect
2. Depletion of the Ozone Layer
3. Acid Rain
4. Nuclear Hazards

UNIT III: Environmental Management and Sustainable Development

1. Environmental Management and Sustainable Development: An overview
2. Sustainable Development Goals (17 SDGs)
3. Significance of Sustainable Development
4. Environment Friendly Practices At Workplace and Home (Three Rs' of Waste Management, Water Conservation, Energy Conservation)

UNIT IV: Environmental Acts

1. The Water (Prevention and Control of Pollution) Act, 1974: Objectives, Definition of Pollution under this act, Powers and Functions of Boards
2. The Air (Prevention and Control of Pollution) Act, 1981: Objectives, Definition of Pollution under this act, Powers and Functions of Boards
3. The Environment (Protection) Act, 1986: Objectives, Definition of important terms used in this Act, Details about the act.
4. Environmental Impact Assessment: Concept and Benefits

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COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
ML307	AECC	Environmental Management and Sustainability	60	20	20	0	0	4	0	0	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; **AECC**- Ability Enhancement Compulsory Course

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UNIT V: Role of Individuals, Corporate and Society

1. Environmental Values
2. Positive and Adverse Impact of Technological Developments on Society and Environment
3. Role of an individual/ Corporate/ Society in environmental conservation
4. Case Studies: The Bhopal Gas Tragedy, New Delhi's Air Pollution, Arsenic Pollution in Ground Water (West Bengal), Narmada Valley Project, Cauvery Water Dispute, Fukushima Daiichi Disaster (Japan), Ozone Hole over Antarctica, Ganga Pollution, Deterioration of Taj Mahal, Uttarakhand flash floods

Suggested Readings:

1. Rogers, P.P., Jalal, K.F. , Boyd, J.A.(Latest Edition) . **An Introduction to Sustainable Development.** Earthscan
2. Kalam, A.P.J. (Latest Edition) . ***Target 3 Billon: Innovative Solutions Towards Sustainable Development.*** Penguin Books
3. Kaushik , A. and Kaushik (Latest Edition). ***Perspectives in Environmental Studies***. New Delhi:
   New Age International Publishers.
4. Dhameja, S.K. (Latest Edition). ***Environmental Studies***. S.K. Kataria and Sons.New Delhi
5. Bharucha, E. (Latest Edition). ***Environmental Studies for Undergraduate Courses.*** New Delhi: University Grants Commission.
6. Wright, R. T. (Latest Edition). ***Environmental Science: towards a sustainable future*** .New Delhi: PHL Learning Private Ltd.
7. Rajagopalan, R. (Latest Edition). ***Environmental Studies***. New York: Oxford University Press.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
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Choice Based Credit System (CBCS) in the Light of NEP-2020
Diploma (Electrical Engineering)
(2021-2024)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTEE302	DCC	DC Machines	60	20	20	30	20	3	0	2	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):
The objective of this course is -

1. To acquaint students with concept of D.C machine.
2. To understand D.C machines performance.
3. To apply the knowledge about testing and controlling D.C machines.

Course Outcomes (COs):
Upon completion of the course, the student shall be able to

1. To get the knowledge of energy conversion process.
2. To comprehend the construction, operations and working of D.C generator.
3. To understand the characteristics of D.C generator.
4. To comprehend the construction, operations and working of D.C motor.
5. To representation of distinguish testing of D.C motor.
6. To acquaint knowledge of Speed control of motor.

Syllabus

UNITI

D.C. Generator **9 Hrs.**

Principle of D.C. generator, Construction- yoke, pole cores and pole shoes, pole coil, armature core, armature winding, brushes, pole-pitch, Conductor-coil and winding element, Coil pitch, Pitch of winding, Back pitch, Front pitch, Commutator pitch, One and two layer winding, Multiplex winding, Lap and wave winding, Simplex lap and wave winding, Types of generators, E.M.F. equation, Losses and power stages, Condition for maximum efficiency, Total losses in DC Generator, Commutation and Armature reaction, Demagnetizing and magnetizing, Demagnetizing and cross magnetizing.

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DTEE302	DCC	**DC Machines**	60	20	20	30	20	3	0	2	4

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UNIT II
9 Hrs.

Generator Characteristics

Characteristics of D.C. Generators: separately-excited Generator,no-load, Curve for self excited generator, Critical resistance, O.C.C. at different speeds, Critical speed, Voltage buildup of ashunt generator, Factors affecting voltage building of a D.C. generator, External characteristic, Voltage regulation, Internal ortotal characteristic, Series generator, Compound-wound generator, Uses of D.C. generators.

UNIT III
8 Hrs.

D.C. Motor

Motor principle, Comparison of generator and motor action, Significance of the back e.m.f., Voltage equation of a motor, Conditions for maximum power, torque, armature torque of a motor, Shaft torque, Motor characteristics, Characteristics of series and shunt Motors, Compound motors, Performance curves, Comparison of shunt and series motors, Losses and Efficiency.

UNIT IV
9 Hrs.

Testing of D.C. Motor

Brake test, Swinburne's test, Advantages and disadvantages of Swinburne's test, Regenerative or Hopkinson's test, Merits of Hopkinson's test, Retardation or Running down test, Field's test for series motor.

UNITV
8 Hrs.

Speed Control of D.C. Motor

Types of speed control, Speed control of shunt and series motors, Merits and demerits of rheostatic control method, electric braking, electric braking of shunt and series motors.

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DTEE302	DCC	DC Machines	60	20	20	30	20	3	0	2	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Textbooks:

1. B. L. Thereja – "A text book of Electrical Technology – Vol - II" – S. Chand Publications.

References:

1. J. B. Gupta – "Theory and Performance of Electrical Machines", S. K. Kataria andSons.
2. S. J. Chapman - "Electric Machinery Fundamentals", Mcgraw Hill.
3. M. G. Say - "The performance and Design of Alternating Current Machines", CBSPublishers & Distributors.
4. D. P. Kothari & I. J. Nagrath - "Electrical Machines", TMH publication.
5. A. E.Fitzerald, C. Kingsley, S. D. Umans - "Electric Machinery"- 6th Edition, TataMcgraw Hill.
6. Dr. P. S.Bimbhra – "Electrical Machinery", Khanna Publisher.
7. J. J. Winders, Jr. – "Power Transformers: Principles and Applications", CRC Press.

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Choice Based Credit System (CBCS) in Light of NEP-2020
Diploma in Electronics and Instrumentation Engineering
(2024-2027)

COURSE CODE	CATE-GORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTEI307N	DCC	Network Analysis	60	20	20	30	20	3	0	2	4

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***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):
The subject aims to provide the student with:
1. An understanding of basic Network Circuits.
2. familiarization with various theorem.
3. Knowledge of various Two port networks.

Course Outcomes (COs):
Students will be able to:
1. Define network circuits.
2. Solve various theorem.
3. Solve Two port networks.

Syllabus

UNIT I **8 Hrs.**

Preliminaries of Electrical elements R, L, C, and circuits; Ohm' Law, Kirchhoff's laws Basic elements: Voltage and current sources, M; Linearity of elements, Elements in series and parallel Controlled sources.

UNIT II **9 Hrs.**

Source transformations – Star Delta conversion, Power and energy in electrical elements. Circuit Analysis Methods: Nodal analysis, Mesh analysis. Theorems: Thevenin's, Norton, Max Power Transfer.

UNIT III **8 Hrs.**

Transient Analysis: Source free RL and RC circuits, Elementary unit step, unit ramp, unit impulse function and synthesis from source free parallel and series RLC circuit.

UNIT IV **8 Hrs.**

Frequency Domain Analysis: The phasor concept, sinusoidal steady state analysis; Laplace transform, initial and final value theorem, circuit analysis in s-domain.

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(2024-2027)

COURSE CODE	CATE-GORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
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DTEI307N	DCC	Network Analysis	60	20	20	30	20	3	0	2	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

9 Hrs.

UNIT V

Two Port Networks: Z, Y, h and ABCD parameters.

Text Books:

1.M.E. Van Valkenburg," Network Analysis", (Pearson), 2019.

References:

1.S P Ghosh A K Chakraborty," Network Analysis & Synth", (MGH).
2. Abhijit Chakrabarti, "Circuit Theory Analysis and Synthesis", Dhanpat Rai & Co., 2018.

List of Experiments:

1. Verification of Superposition Theorem.
2. Verification of Norton's and Thevenin's Theorem.
3. Verification of Maximum Power Transfer Theorem.
4. Performance of R-L-C Series Circuit.
5. Performance of R-L-C Parallel Circuit.
6. Study of Electrical Resonance in Series Circuit.
7. Verification of Relation Between Line and Phase Voltage and Current in 3-Phase Circuit.
8. Study of Transients.
9. Verification of Kirchhoff's Voltage Law (KVL).
10. Verification of Kirchhoff's Current Law (KCL).

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Choice Based Credit System (CBCS) in the Light of NEP-2020
Common to Diploma (EE/Solar Engineering)
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COURSE CODE	CATE GORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTEE305	DCC	Generation Transmission and Distribution	60	20	20	0	0	3	0	0	3

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
***Teacher Assessment** shall be based on the following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):
The main aim of this course is to understand:
1. Electric power generation from conventional and non-conventional energy source.
2. Analyze the performance of short, medium and long transmission lines.
3. To discuss the operation of HVAC & HVDC transmission, insulator strings, cables and different distribution schemes.

Course Outcomes (COs):
Students will be able to-
1. Understand the basic concepts of electrical power generation, transmission and distribution.
2. Apply the principles of physical sciences to understand the working of conventional and non-conventional power plants.
3. Analyze the performance of various types of transmission lines and distribution system topologies.
4. Illustrate the different types of insulators, underground cables and effect of corona.
5. Understand A.C transmission and D.C transmission schemes.

Syllabus

UNIT I **7 Hrs.**

Conventional and non-conventional power Generation: General layout, working and site selection of thermal power plant, hydroelectric power plant, nuclear power plant and pumped storage plants. Introduction to Non-Conventional Sources Solar Energy, wind Energy (descriptive treatment only).

UNIT II **8 Hrs.**

AC Transmission: Main Components of Transmission Lines, Line Supports, Conductor Materials, Spacing of Conductor, Layout of electric supply system, Advantage and disadvantages of AC Transmission system.

DC Transmission: Layout scheme of DC transmission, Advantage and disadvantages of DC Transmission system, Principle of HVDC transmission.

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DTEE305	DCC	Generation Transmission and Distribution	60	20	20	0	0	3	0	0	3

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
***Teacher Assessment** shall be based on the following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

UNIT III **7 Hrs.**

Performance of Transmission Lines: Classification of lines, Medium Transmission lines, nominal T method, nominal π method, ABCD constants of Transmission lines, Voltage Regulation, Transmission efficiency, Ferranti effect. Sag, Tension Calculations, Effect of Wind and Ice on weight of Conductor, Corona-formation and corona loss-Factors affecting Corona.

UNIT IV **6 Hrs.**

Line Insulators and Cables: Introduction: Line Insulator Materials, Properties of Insulators, Types, causes of failure of Insulators, voltage distribution in insulator string, improvement of string efficiency, testing of insulators. Underground cables, Types of cables, Grading of cables - capacitance grading and inter sheath grading.

UNIT V **7 Hrs.**

Distribution Systems: Introduction to distribution system, Radial distribution system, Ring Main distribution system, Inter connected system, Types of DC distributers, Voltage Drop Calculations in A.C. Distributors for the following cases: Power Factors referred to receiving end voltage and with respect to respective load voltages, Different types of supply system and their comparison.

Textbooks:

1. Leonard L. Grigsby, 'Electric Power Generation, Transmission, and Distribution', CRC Press, 3rd edition, 2012.
2. S.N. Singh, 'Electric Power Generation, Transmission and Distribution', Prentice Hall of India Pvt. Ltd, New Delhi, Second Edition, 2011.

References:

1. Soni, Gupta, Bhatnagar, Electrical Power (Generation, Transmission, Distribution, Protection and Utilization), Dhanpath Rai and Sons, Delhi, 2012.
2. B. R. Gupta, S. Chand, 'Power System Analysis and Design' New Delhi, Fifth Edition, 2008.
3. C.L. Wadhwa, 'Electrical Power Systems', New Age International Publishers, 8th2022.
4. D. P. Kothari, I.J. Nagarath, 'Power System Engineering', Tata McGraw-Hill Publishing Company Limited, New Delhi, third Edition, 2019.

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DTEE304N	DCC	Electrical Engineering Drawing	0	0	0	30	20	0	0	4	2

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. To draw assembled view of dissembled parts of electrical machines and transformers.
2. To develop the ability to identify different parts of electrical machines and prepare list of materials for various parts.
3. To draw circuit diagram for different AC motor starters.
4. To follow BIS and REC standard to supportthing installation and SP and DP Structures and stay sets for line supports.
5. To use various symbols to draw the single line diagram of 33/11kV substations.

Course Outcomes (COs):

After the successful completion of this course students will be able to

1. A technical person takes help of an engineering drawing to understand the constructional features of machines and accessories.
2. Electrical drawing is introduced for the Diploma students to be familiar with different assembled and dissembled views of electrical machine like: Three phase alternator, Induction motors, Transformers, Circuit diagrams of AC motors starters, Development of stator windings of single phase and three phase motors and alternators, with conventional symbols.
3. Sketching as to BIS and REC specification and symbol of electrical earthing installations, SP and DP structures and substations of 132/33 kV and 33/11 kV type.
4. This will enable them to follow engineering drawing in the working environment.

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COURSE CODE	CATEGORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
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DTEE304N	DCC	Electrical Engineering Drawing	0	0	0	30	20	0	0	4	2

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

List of Experiments:

1. Draw the winding diagram of a Single Layer Lap and Single Layer Wave connected D C Machine.
2. Draw the different Industrial Electrical symbols.
3. Draw the different types of poles and Towers with feeders and Distributors and Lightning Arrestors.
4. Draw the different types of earthing's.
5. Draw different core sections of a transformer.
6. Draw the Battery Charging Circuit with Battery.
7. Draw the Single, Double and Triple pole types, Main Switches, Energy meters.
8. Sketches of C.T., P.T. and other Relays with feeders and distributors.
9. Draw the single line diagram of 33/11 kV substation.
10. Stay Arrangement and guard wires arrangement for roads and rail lines crossing.

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