Semester VI

Sl. No.	Category	Code No.	Course Title	Hours per week			Total Contact Hrs/Week	Credit
				L	T	P		
1	Programme core course-21	CEPC-601	Public Health Engineering	3	0	0	3	3
2	Programme core course-22	CEPC-602	Public Health Engineering Lab.	0	0	4	4	2
3	Programme Elective course-4 (Anyone to be selected)	CEPE-603/A	Airport Engineering	3	0	0	3	3
		CAPE-603/A	Construction Equipment and Automation	3	0	0	3	
		CAPE-603/B	Building Automation system 2	3	0	0	3	
4	Humanities and Social Science course-5	HS604	Entrepreneurship and Start-up's	3	1	0	4	4
5	Open Elective-2	(Anyone to be selected from Annexure-II)		4	0	0	4	4
6	Mandatory Course-2	AU-606	Indian Constitution	2	0	0	2	0
7	Major Project	CEPR-607	Major Project-II	0	0	6	6	3
8	Seminar	CESE-608	Seminar	2	0	0	2	1
			Total					**20**

PUBLIC HEALTH ENGINEERING

Course Code	CEPC-601
Course Title	Public Health Engineering
Number of Credits	3 (L: 3, T: 0, P: 0)
Prerequisites	NIL
Course Category	PC

Course Outcomes: -

After completing this course, student will be able to:

1) Know the procedure to identify the sources of surface and subsurface water. **(K2)**

2) Estimate the quantity of drinking water required for population. **(K3)**

3) Draw layout for water supply scheme. **(K2)**

4) Device suitable water treatment technique. **(K3)**

5) Evaluate the characteristics and suggest treatment of sewage. **(K3)**

Course Content:-

Module- 1: Sources, Demand and Quality of water

Number of class hours: 3-4 Hours

Suggestive Learning Outcomes: After completing this module students will be able to-

1) Know the procedure to identify the sources of surface and subsurface water
2) Describe the demand of water also factors affecting rate of demand
3) Examine the quality of water with respect to physical, chemical and biological characteristics
4) Estimate the quantity of water supply required for city of town

Detailed content of the unit:

- Water supply schemes - Objectives, components,
- Sources of water: Surface and Subsurface sources of water, Intake Structures, Definition and types, Factors governing the location of an intake structure, Types ofintakes.
- Demand of water: Factors affecting rate of demand, Variations of water demands, forecasting of population, Methods of forecasting of population, (Simple problems on forecasting of population), Design period, Estimating of quantity of water supply required for city or town.
- Quality of water**:** Need for analysis of water, Characteristics of water- Physical, Chemical and Biological, Testing of water for Total solids, hardness, chlorides, dissolved Oxygen, pH, Fluoride, Nitrogen and its compounds, Bacteriological tests, Ecoli, Bcolii ex,MPN, Sampling of water, Water quality standards as per IS10500.

Module- 2: Purification of water

Number of class hours: 3-4 Hours

Suggestive Learning Outcomes: After completing this module students will be able to-

1) Explain objectives of water treatment
2) Describe the procedure of water treatment process
3)Know about water softening and defluorination techniques

Detailed content of the unit:

- Purification of Water: Objectives of water treatment, Aeration- objects and methods of aeration, Plain sedimentation, Sedimentation with coagulation, principles of coagulation, types of coagulants, Jar Test, process of coagulation, types of sedimentation tanks, Clariflocculator.
- Filtration - mechanization of filtration, classification of filters: slow sand filter, rapid sand filter, pressure filter. Construction and working of slow sand filter and rapid sand filter, operational problems in filtration. Disinfection: Objects, methods of disinfection, Chlorination-Application of chlorine, forms of chlorination, types of chlorination practices , residual chlorine and its importance, Flow diagram of water treatment plants.
- Miscellaneous water Treatments: Introduction to water softening, Defluoridation techniques.

Module-3: Conveyance and Distribution of water

Number of class hours: 6-7 Hours

Suggestive Learning Outcomes: After completing this module students will be able to-

1) Describe conveyance of water, types of pipes, joints and valves.
2) Explain methods used for distribution of water
3) Develop layouts of distribution of water

Detailed content of the unit: -

- Conveyance: Types of Pipes used for conveyance of water, choice of pipe material, Types of joints & Types of valves- their use, location and function on a pipeline.
- Distribution of water: Methods of distribution of water- Gravity, pumping, and combined system, Service reservoirs-functions and types, Layout of distribution of Water-Dead end system, grid iron system, circular system, radial system; their suitability, advantages and disadvantages.

Module-4: Domestic sewage and System of Sewerages

Number of class hours: 6-7 Hours

Suggestive Learning Outcomes: After completing this module students will be able to-

1) Describe building sanitation
2) Illustrate different plumbing system
3) Explain systems of sewerage and sewer appurtenances

Detailed content of the unit:

- Building Sanitation: **N**ecessity of sanitation, Necessity to treat domestic sewage, Definitions - Sewage, sullage, types of sewage. Definition of the terms related to Building Sanitation- Waterpipe, Rain waterpipe, Soil pipe, Sullage pipe, Vent pipe. Building Sanitary fittings-Water closet – Indian and European type, flushing cistern, wash basin,sinks, Urinals. Traps- types, qualities of good trap. Systems of plumbing- one pipe, two pipe, single stack, choice of system. Principles regarding design of building drainage, inspection and junction chambers, their necessity, location, size and shape.

  Systems of Sewerage and Sewer Appurtenances: Types of Sewers, Systems of sewerage, self-cleansing velocity and non-scouring velocity, Laying, Testing and maintenance of sewers, Manholes and Drop Manhole-component parts, location, spacing, construction details, Sewer Inlets, Street Inlets.

Module- 5: Characteristics and treatment of Sewage

Number of class hours: 5-6 Hours

Suggestive Learning Outcomes: After completing this module students will be able to-

1. Explain B.O.D., C.O.D. and its significance
2. Apply central pollution control norms for discharge of treated sewage.
3. Develop flow diagram of conventional sewage treatment plant
4. Illustrate treatment of swage process

Detailed content of the unit: -

Analysis of sewage: Characteristics of sewage, B.O.D., C.O.D. and its significance, Central Pollution Control Board Norms for discharge of treatedsewage, Objects of sewage treatment and flow diagram of conventionalsewage treatment plant.

Treatment of Sewage: Screening, Types of screens, Grit removal, Skimming, Sedimentation of sewage, Aerobic and anaerobic process, Sludge digestion, trickling filters, Activated sludge process, Disposal of sewage, Oxidation pond, Oxidation ditch. Septic tank, Recyclingand Reuse of domestic waste.

References: -

1. Sharma S.C, Environmental Engineering, Khanna Publishing House, NewDelhi
2. Garg, S.K., Environmental Engineering Vol. I and Vol. II, Khanna Publishers
3. Birdie, G. S. and Birdie, J. S.Water Supply and Sanitary Engineering, DhanpatRai

4. Gupta, O.P., Elements of Environmental Pollution Control, Khanna Publishing House,Delhi
5. Rao, C.S., Environmental Pollution Control Engineering, New AgeInternational
6. Punmia, B C, Environmental Engineering, vol. I and II, LaxmiPublishers
7. Peavy H S, Rowe D R, and Tchobanoglous G, Environmental Engineering,McGraw
8. Basak N N, Environmental Engineering, McGraw HillPublishers.

PUBLIC HEALTH ENGINEERING LAB

Course Code	CEPC-602
Course Title	Public Health Engineering Lab
Number of Credits	2 (L: 0, T: 0, P: 4)
Prerequisites	NIL
Course Category	PC

Course Outcomes: -

After completing this course, student will be able to:

1) Perform various tests to assess quality of water. **(K3)**
2) Estimate dissolved solids as per BIS codes. **(K3)**
3) Measure BOD and COD of sewage sample. **(K2)**
4) Draw line diagram of water pipeline system for a locality. **(K3)**
5) Explain different methods used in water supply system. **(K2)**

Course Content:-

Number of class hours: 25 Hours

List of Practical to be performed:

1. Determine pH value of given sample of water.
2. Determine the turbidity of the given sample of water.
3. Determine residual chlorine in a given sample of water.
4. Determine suspended, dissolved solids and total solids of given sample of water.
5. Determine the dissolved oxygen in a sample of water.
6. Undertake a field visit to water treatment plant and prepare a report.
7. Determine the optimum dose of coagulant in a given raw water sample by jar test.
8. Draw sketches of various valves used in water supply pipe line
9. Draw a sketch of one pipe and two pipe system of plumbing
10. Determine B.O.D. of given sample of sewage.
11. Determine pH value of given sample of sewage.
12. Determine suspended solids dissolved and total solids for sample of sewage.
13. Determine the dissolved oxygen in the given sample of sewage.
14. Determine C.O.D. of given sample of sewage.
15. Prepare a report of a field visit to sewage treatment plant

References: -

1. Sharma S.C, Environmental Engineering, Khanna Publishing House, NewDelhi
2. Garg, S.K., Environmental Engineering Vol. I and Vol. II, Khanna Publishers
3. Birdie, G. S. and Birdie, J. S.Water Supply and Sanitary Engineering,Dhanpat Rai
4. Gupta, O.P., Elements of Environmental Pollution Control, KhannaPublishing House, Delhi
5. Rao, C.S., Environmental Pollution Control Engineering, NewAge International
6. Punmia, B C, Environmental Engineering, vol. I and II, Laxmi Publishers
7. Peavy H S, Rowe D R, and Tchobanoglous G, EnvironmentalEngineering, McGraw
8. Basak N N, Environmental Engineering, McGraw Hill Publishers.

AIRPORT ENGINEERING

Course Code	CEPE-603/A
Course Title	Airport Engineering
Number of Credits	3 (L:3, T:0, P:0)
Prerequisites	NIL
Course Category	Programme Elective course-4

Course Objectives: -

1) To describe the important milestones of air transportation. (K2)
2) To apply the methods of airport regional planning and development. (K3)
3) To prepare the elements of runway orientation and taxiway layout. (K3)
4) To describe airport pavements and drainage systems. (K2)

5) To name different visual aids required for safe landing and takeoff operating of airport. (K1)

Course Content:

Module- 1: Introduction

Number of class hours: 8

Suggestive Learning Outcomes: After completion of the module, students will be able to:

1) Classify different airports
2) Define airport terminologies
3) Explain airport surveys

Detail Course Content:

- Modes of transportation, Introduction to air transportation and its challenges, Advantages of air transportation, History of aviation, Development of air transportation in India,ICAO,

- Components of aeroplane, Classification of aerodrome and air ports (International and domestic).

- Airport terminology – aerodrome, airfield and airport, airport capacity, runway, taxiway, hanger, terminal building, apron, control tower, approach zone, obstruction clearance line, landing area, instrument landing system, take off distance.
- Airport Surveys

Module- 2: Airport Layout

Number of class hours: 6

Suggestive Learning Outcomes: After completion of the module, students will be able to:

1) Select the site for an airport
2) Explore aircraft characteristics
3) Identify the role of an airport

Detail Course Content:

- Airport Planning, selection of site, Airport size, factors affecting the site selection of airport, Development of existing airport, recommendation for airport development.
- Aircraft characteristics, Air traffic forecasting.
- Role of an airport, Airport obstructions, clear zone, turning zone.
- Regional planning, Airport architecture.

Module- 3: Runway and Taxiway

Number of class hours: 8

Suggestive Learning Outcomes: After completion of the module, students will be able to:

1) Outline the runway orientation
2) Solve simple numerical on runway length correction
3) Plan the layout of taxiway

Detail Course Content:

- Runway orientation, runway patterns, runway lengths and widths for various airports, correction for runway length with simple numerical.
- Elements of runway geometric design
- Layout of Taxiway, Geometric standards of Taxiway,
- Exit Taxiways, Turn-around Taxiway, Loading Apron, Holding Apron, Fillets, Separation Clearance.

Module- 4: Airport Pavements and Drainage

Number of class hours: 8

Suggestive Learning Outcomes: After completion of the module, students will be able to:

1) Name the types of airport pavement
2) Summarize the design factors of airport pavement
3) Classify different airport drainage system

Detail Course Content:

- Flexible and rigid pavements.
- Design factors of airport pavement, Design of flexible pavement, Design of rigid pavement, LCN for flexible and rigid pavements.

- Airport drainage and its necessity, factors affecting the drainage system & capacity.
- Types of drains – only name with brief description.

Module- 5: Airport Visual Aids

Number of class hours: 10

Suggestive Learning Outcomes: After completion of the module, students will be able to:

1) Name different airport markings and lightings

2) Identify different air traffic signs

3) Explore the use of heliport

Detail Course Content:

- Airport Markings – Runway markings, Taxiway Markings, Other Markings.
- Airport Lightings – Lights at an airport, Azimuth guidance unit, Light fixtures and Light intensity.
- Air Traffic Sign – Types of sign and their uses, wind direction indicator, landing direction indicator.
- Heliport – Advantages of helicopter, Site Selection for heliport, Classification of heliport, Elevated Heliport.

Suggested learning resources

1. Khanna S. K., Arora M. G. and Jain S. S., "Airport Planning and Design", 1st Edition, Mench and Bros. Roorkee, 2009.
2. Virender Kumar and Satish Chandra. "Airport Planning and Design", - Galotia Publication press.
3. Rangwala, S. C. "Airport Engineering", Charotar Publishing House pvt. Ltd. Saxena, S. C., "Airport Engineering Planning and Design", CBS Publishers & Distributors pvt.Ltd.
4. NJ Ashford, Airport Engineering 4e- Planning, Design and Development of Century Airports, John Wiley & Sons Inc, 4th Edition, 2011.

CONSTRUCTION EQUIPMENT AND AUTOMATION

Course Code	CAPE-603/A
Course Title	Construction equipment and automation
Number of Credits	3 (L: 3, T: 0, P: 0)
Prerequisites	NIL
Course Category	Programme Elective course-4

Course outcomes:

CO1: Know about equipment which are required for construction purpose (K1)
CO2: Discus about automation in construction industry. (K2)
CO3: Discus about robotics used for construction purpose. (K2)
CO4: Explain about 3D printing concept. (K2)

Detail course:

Module 1
Introduction: Unique features of construction equipment Need of construction Equipment, past history.

Module 2
Construction Equipment: Capacity, Feasibility, owning and operating cost and Productivity of Different Equipment: Excavators, Pavers, Plastering machines; Pre-stressing jacks and grouting equipment; Cranes and Hoists, Concrete Batching Plants, etc.

Module 3
Automation in Construction Industry: Need and Benefit of automation: Automation in Canal lining, Automation in Construction of Highway and Automation in concrete technology. Drones: Photogrammetry, Project Monitoring- real time data, aerial mapping, land survey, quantity survey, quality survey, structural health monitoring survey, under water survey.

Module 4
Robotics in Construction: Introduction, Benefits of robots in construction industry with respect to time, cost, quality, safety. Use of robots for construction activities like Brick laying, Demolition, Material Handling, Structural steel cutting, Rebar tying/bending, Form work mould making.

Module 5
3D printing- print complex, layered, parts and objects of homes, buildings, bridges and roads 3D Scanner for surveying and project management. Introduction to Advanced Technologies: Virtual Reality, Augmented Reality, Building Information Modeling

References:

1) Construction Planning, Methods and Equipment, R.L Peurifoy, McGraw Hill, 2011
2) Construction Project management, Theory & Practice, Kumar Neeraj Jha,., Pearson Education India.
3) BIM and Construction Management: Proven Tools, Methods, and Workflows By Brad Hardin, Dave McCool, John Wiley & Sons
4) Construction equipment and its planning and application Mahesh Varma Metropolitan Book Co
5) Robotics and Automation in Construction, Open access peer- reviewed edited volume
6) Automation in Construction Management: Automated management of Construction Materials Using RFID Technology, Javad Majrouhi Sardroud, Scholars' Press
7) Enhancing BIM Methodology with VR Technology, Open access peer

BUILDING AUTOMATION SYSTEM 2

Course Code	CAPE-603/B
Course Title	Building automation system 2
Number of Credits	3 (L: 3, T: 0, P: 0)
Prerequisites	NIL
Course Category	PE

Course outcomes:

CO1: Discus about building management system and automation. (K**2)**
CO2: Discus about the fire alarm system (K2)
CO3: Discus about control theory and control panel. (K2)
CO4: Discus about HVAC system. (K2)
CO5: Discus about Green Building theory and IBMS

Detailed Course Content

Module 1

Introduction
Concept and application of Building Management System (BMS) and Automation, requirements and design considerations and its effect on functional efficiency of building automation system, architecture and components of BMS.

Module 2

Fire Alarm System
Fundamentals: What is Fire? Fire modes, History, Components, and Principles of Operation. FAS Components: Different fire sensors, smoke detectors and their types, Fire control panels, design considerations for the FA system. Field Components, Panel Components, Applications. FAS Architectures: Types of Architectures,

Module 3

HVAC system
Fundamentals: Introduction to HVAC, HVAC Fundamentals, Basic Processes (Heating, Cooling etc)
Basic Science: Air Properties, Psychometric Chart, Heat Transfer mechanisms, Examples.
Human Comfort: Human comfort zones, Effect of Heat, Humidity, Heat loss.
Processes: Heating Process, Cooling Process, Ventilation Process

Module 4

Control Theory: Instrumentation Basics, Field components & use, DDC & applications.
Control Panel: HVAC Control Panel, MCC Basics, Panel Components
Communication: Communication Basics, Networks.

Module 5

Energy Management System:
ASHRAE Symbols Energy Management: Energy Savings concept, Lighting control, Building Efficiency improvement, Green Building (LEED) Concept & Examples.
Building Management System: IBMS (HVAC, Fire & Security) project cycle.
Verticals: Advantages & Applications of BMS, Examples Integration: IBMS Architecture, Normal & Emergency operation. Advantages of BMS

Suggested Learning Resources:

- Joseph S. Martinich, ―Production & Operation Management‖, John Wiley & Sons.
- S. N. Chary,‖ Production and operations management, TMH 4th edition
- Harold T. Amrine, John A. Ritchey, Colin L. Moodie, Joseph F. Kmec ―Manufacturing organization and Management‖ Pearson publication 6th edition
- S. Anil Kumar, N. Suresh ―Production and operations management‖, New age International, 2nd Ed.
- M. Mahajan, ―Industrial Engg. & Production Management‖, Dhanpat Rai & Co.

ENTREPRENEURSHIP AND STARTUPS

Course Code	:	HS 604
Course Title	:	Entrepreneurship and Start-ups
Number of Credits	:	4 (L: 3, T:1 , P: 0)
Prerequisites (Course code)	:	None
Course Category	:	HS

CO1 Understand the basic concepts of Entrepreneurship and Startups.

CO2 Illustrate skills of discovering business ideas, visualizing and planning a business.

CO3 Analyze market and business risk for strategy development.

CO4 Demonstrate skills of organizational management.

CO5 Exhibit knowledge of financing methods, institutions and skills for communication of ideas.

Course Content:

Module-1-Introduction and Basics of Entrepreneurship and Start–Ups

Suggestive Learning Outcomes:

(1) Describe the Basic Elements of Entrepreneur and Entrepreneurship

(2) Distinguish between Entrepreneur, Manager and Intrapreneur

Content:

- Definitions, Traits of an entrepreneur, Factors influencing entrepreneurship, Types and Functions of Entrepreneurs, Need for promotion of entrepreneurship, Intrapreneur, Motivation
- Role of Entrepreneurs in Economic Development
- Similarities/differences between - Entrepreneur and Manager, Entrepreneur and Intrapreneur.

Module-2–Business Ideas and their implementation

Suggestive Learning Outcomes:

(1) Illustrate different Types of Business Planning and Business Structure
(2) Select specific Institutions Assisting Entrepreneur

Content:

- Discovering ideas
- Visualizing the business
- Business Plan, - Types of planning, Importance of planning, Steps in planning
- Types of Business Structures
- Institutions assisting entrepreneur

Module-3–Idea to Start-up

Suggestive Learning Outcomes:

(1) Identify Steps for Starting a SSI
(2) Predict the Target Market and Associated Risk

Content:

- Market analysis – Identifying the target market
- Competition evaluation and Strategy Development
- Steps for starting a small enterprise
- Risk analysis

Module-4–Management of Enterprise

Suggestive Learning Outcomes:

(1) Apply the Basic Accounting Concepts in Business
(2) Demonstrate Knowledge of Pricing, Positioning and Advertising of Products

Content:

- Recruitment and management of talent.
- Determinants of Price, Pricing methods in practice.

- Market Positioning, Advertising and Sales Promotion
- Accounting - Understanding basics of Transaction, Journal, Ledger, Cashbook, Trial Balance, Cost Sheet and Final Accounts through simple problems

Module-5-Financing and Communication of

Ideas<u>Suggestive Learning Outcomes</u>:

(1) Exhibit Knowledge of various Financial Institutions and Financing Methods
(2) Illustrate Business Ideas through Communication Skills

Content:

- Financial Institutions
- Financing methods available for start-ups in India
- Communication of Ideas to potential investors–Investor Pitch

SUGGESTED LEARNING RESOURCES:

S.No.	Title of Book	Author	Publication
1.	The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company	Steve Blank and Bob Dorf	K & S Ranch ISBN–978-0984999392
2.	The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses	Eric Ries	Penguin UK ISBN–978-0670921607
3.	Demand: Creating What People Love Before They Know They Want It	Adrian J. Slywotzky with Karl Weber	Headline Book Publishing ISBN–978-0755388974
4.	Entrepreneurship	Alpana Trehan	Dreamtech PressISBN: 978-93-5004-026-3
5	Marketing and Sales Management	D C Kapoor	S Chand and Company Ltd. ISBN: 81-219-2430-8

6	Business Economics	H L Ahuja	S Chand and Company Ltd. ISBN: 81-219-1791-3
7	Financial Accounting (Principles and Practice)	Jawahar Lal & Seema Srivastava	S Chand Publishing
8	Accounting for Management	N.P. Srinivasan & Sakthivel Murugan	S Chand Publishing
9	Marketing	Harsh V Verma and Ekta Duggal	Oxford University Press ISBN: 0-19-945910-X
10	Marketing (Asian Edition)	Paul Baines, Chris Fill, Kelly Page and Piyush K. Sinha	Oxford University Press
11	Entrepreneurship	Rajeev Roy	Oxford University Press ISBN: 0-19-807263-5
12	Entrepreneurship Development	Kumar S Anil	New Age Publishers
13	Human Resource Management	Uday Kumar Haldar and Juthika Sarkar	Oxford University Press
14	Fundamentals of Entrepreneurship	S K Mohanty	Prentice Hall of India Private Limited ISBN: 81-203-2867-1
15	Entrepreneurship Development	S S khanka	S Chand and Company Ltd. ISBN: 81-219-1801-4

SUGGESTED SOFTWARE/LEARNINGWEBSITES:

a. https://www.fundable.com/learn/resources/guides/startup
b. https://corporatefinanceinstitute.com/resources/knowledge/finance/corporate- structure/
c. https://www.finder.com/small-business-finance-tips
d. https://www.profitbooks.net/funding-options-to-raise-startup-capital-for-your-business/

INDIAN CONSTITUTION

Course Code	:	AU-606
Course Title	:	Indian Constitution
Number of Credits	:	0 (L: 2, T: 0; P:0)
Prerequisites (Course code)	:	None
Course Category	:	AU

Course Outcomes:

CO1. Illustrate Preamble, Basic Structure, Fundamental Rights and Duties of IndianConstitution (K3).

CO2. Discuss the Structure of The Indian Union Government (K2).

CO3. Memorize the Role and Power of Governor, Chief Minister and Council of Ministers and explain the role of State Secretariat (K2).

CO4. Describe the role of Local Administration (K2).

CO5. Explain the Role and Functioning of Election Commission (K2).

Detailed Course Content:

Module-1 – **The Constitution –**

IntroductionNumber of Class hours: 06

Learning Outcomes:

1. Describe the History of the Making of the Indian Constitution (K2)
2. Illustrate Preamble and the Basic Structure of Indian Constitution (K3)
3. Illustrate the Fundamental Rights and Duties set by Indian Constitution (K3)

Detailed content of the unit:

1. The History of the Making of the Indian Constitution
2. Preamble and the Basic Structure, and its interpretation
3. Fundamental Rights and Duties and their interpretation
4. State Policy Principles

Module-2 – **Union Government**

Number of Class hours: 06

Learning Outcomes:

1. Discuss the Structure of the Indian Union Government (K2).
2. Memorize the Role and Power of President, Prime Minister and Council of Ministers

of India (K1)

3. Explain the role of Lok Sabha and Rajya Sabha (K2)

Detailed content of the unit:

1. Structure of the Indian Union
2. President – Role and Power
3. Prime Minister and Council of Ministers
4. Lok Sabha and Rajya Sabha

Module-3 – State Government

Number of Class hours: 06

Learning Outcomes:

1. Memorize the Role and Power of Governor, Chief Minister and Council of Ministers ɗa state (K1)
2. Explain the role of State Secretariat (K2)

Detailed content of the unit:

1. Governor – Role and Power
2. Chief Minister and Council of Ministers
3. State Secretariat

Module-4 – Local Administration

Number of Class hours: 06

Learning Outcomes:

1. Describe the role of District Administration (K2)
2. Explain the role of Municipal Corporation (K2)
3. Discuss the role of Zila Panchayat (K2)

Detailed content of the unit:

1. District Administration
2. Municipal Corporation
3. Zila Panchayat

Module-5 – Election Commission

Number of Class hours: 06

Learning Outcomes:

1. Explain the Role and Functioning of Election Commission (K2)

2. Classify the role and functioning of Chief Election Commissioner and State ElectionCommissioner (K2).

Detailed content of the unit:

1. Role and Functioning of Election commission
2. Chief Election Commissioner
3. State Election Commission

Suggested Learning Resources:

S. No.	Title of Book	Author	Publication
1.	Ethics and Politics of the Indian Constitution	Rajeev Bhargava	Oxford University Press, New Delhi, 2008
2.	The Constitution of India	B.L. Fadia	Sahitya Bhawan; New edition (2017)
3.	Introduction to the Constitution of India	DD Basu	Lexis Nexis; Twenty-Third 2018 edition

Suggested Software/Learning Websites:

a. https://www.constitution.org/cons/india/const.html
b. http://www.legislative.gov.in/constitution-of-india
c. https://www.sci.gov.in/constitution
d. https://www.toppr.com/guides/civics/the-indian-constitution/the-constitution-of-india/

Major Project - II

Course Code	CEPR-607
Course Title	Major Project
Number of Credits	3 (L: 0, T: 0, P: 6)
Prerequisites	Nil
Course Category	Project Work (PR)

Course Outcome:-

After completion of the course, students will be able to:

C.O. 1: Demonstrate a sound technical knowledge of their selected project topic and the knowledge, skills and attitudes of a professional engineer (K2).

C.O. 2: Develop the skill of working in a Team (K3).

C.O. 3: Design engineering solutions to complex problems utilizing a systems approach (K6).

C.O. 4: Design the solution of an engineering project involving latest tools and techniques (K6).

C.O. 5: Develop the skill of effective communication with engineers and the community at large in written an oral forms (K3).

Course Content:-

The major project topic should be selected / chosen to ensure the satisfaction of the urgent need to establish a direct link between education, national development and productivity and thus reduce the gap between the world of work and the world of study. The course should provide the scope to develop the following by the students-

Develop sound knowledge about the domain of the project work.

1) Perform detailed study about various components of a project.
2) Learn to be an important member of a team for successful execution of a project work.
3) Study about methodologies and professional way of documentation and communication related to project work.
4) Develop idea about problem formulation, finding the solution of a complex engineering problem.
5) Develop project report as per the suggested format to communicate the findings of the project work.
6) Acquire the skill of effective oral communication to the fellow engineers and people in the society at large.
7) Knowledge of how to organize, scope, plan, do and act within a project thesis.
8) Familiarity with specific tools (i.e. hardware equipment and software) relevant to the project selected.
9) Demonstrate the implementation of a major project work.

Seminar

Course Code	CESE-608
Course Title	Seminar
Number of Credits	1 (L: 0, T: 0, P: 1)
Prerequisites	Nil
Course Category	Seminar presentation

Course Outcome:-

After completion of the course, students will be able to:

C.O.1: Demonstrate a thorough and systematic understanding of a seminar topic (K2).

C.O. 2: Identify the methodologies and professional way of documentation and communication (K3).

C.O.3: Demonstrate the ability to construct a report consistent with expectations of the topic, including an appropriate organization, style, voice, and tone (K3).

C.O.4: Develop the ability to follow discussions, oral arguments, and presentations, noting main points or evidence and tracking through different comments given by the audience (K3).

C.O.5: Develop the communication skill as a speaker (K3).

Course Content:-

The seminar topics may be any aspect of the science and technology, entrepreneurship or any contemporary social issues to be solved by specific branch of engineering and technology (For example, Water logging problems in a particular city may be a seminar topic for CivilEngineering Students) must be approved by the instructor in advance.

The course should have the following-

7) Practice speaking in front of a scientific audience.
8) Explore topics in detail.
9) Research topics and organize presentations.
10) To improve as speakers, each student will receive feedback from the fellow students and the instructor.
11) PowerPoint, Key Note or overheads are acceptable media for Visual aids. Visual aids should look professional and be readable in the entire room; use spell check and proofread for typographical errors.
12) Students have to submit a hard copy contains detailed outline (4-5 pages) of their presentation and also a brief abstract (one or two paragraphs; **250 words max.**) describing their presentation.
13) Each student will give 20-minute presentations followed by 3 minutes of question-answer session.

Proposal Seminar Format for Students:

- Introduce yourself.
- Give an introduction and background information on your topic. What relevant research has been performed previously?
- State the problem(s) that remain unanswered.
- Clearly state your objectives and give the specific hypotheses you wish to test.
- Describe the methodology you will use to test your hypotheses. Be sure you fully understand your chosen methods. Give reasons why you chose these methods over other approaches.

- Present any data you have collected thus far.
- Describe what remains to be done, and what you expect to find.

Explain the significance of your findings (or potential future findings).

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