



CIRCULAR

Date: 15/07/2022

All the students are hereby informed that following are the open elective course offered by the departments for the semester 2022-23 Odd semester.

Department	Course offered		Faculty
	Subject code	Subject name	
Department of Civil Engineering	18CV753	Environmental protection and management	Dr Rashmi H R
Department of Mechanical Engineering	18ME751	Energy and Environment	Mr Prabhu K S
Department of Computer science	18CS752	Phython application programming	Mr Deepak M D Mrs Jayasubha J Mrs Nagaveni B Nimbal Mrs Nita Meshram
Department of Electronics and communication	18EC751	Communication theory	Dr Manu

Students are directed to register for any one of the above electives other than offered from the parent department. The registration should be done on or before 30 July 2022 in the parent department.

Syllabus is attached for further information

15.07.2022  
Principal  
15/7/22

CC to:

CSE

ECE

Civil

Mechanical

Electrical

Kohas  
hmv - 15/7/22

W. Xelle

15/7/22

15/7/2022

**PYTHON APPLICATION PROGRAMMING**  
**(OPEN ELECTIVE)**  
**(Effective from the academic year 2018 -2019)**  
**SEMESTER – VI**

<b>Course Code</b>	<b>18CS752</b>	<b>IA Marks</b>	40
<b>Number of Lecture Hours/Week</b>	3:0:0	<b>Exam Marks</b>	60
<b>Total Number of Lecture Hours</b>	40	<b>Exam Hours</b>	03

**CREDITS – 03**

**Course Learning Objectives:** This course (18CS752) will enable students to

- Learn Syntax and Semantics and create Functions in Python.
- Handle Strings and Files in Python.
- Understand Lists, Dictionaries and Regular expressions in Python.
- Implement Object Oriented Programming concepts in Python
- Build Web Services and introduction to Network and Database Programming in Python.

<b>Module – 1</b>	<b>Teaching Hours</b>
Why should you learn to write programs, Variables, expressions and statements, Conditional execution, Functions <b>Textbook 1: Chapters 1 – 4</b> <b>RBT: L1, L2, L3</b>	08
<b>Module – 2</b> Iteration, Strings, Files <b>Textbook 1: Chapters 5– 7</b> <b>RBT: L1, L2, L3</b>	08
<b>Module – 3</b> Lists, Dictionaries, Tuples, Regular Expressions <b>Textbook 1: Chapters 8 - 11</b> <b>RBT: L1, L2, L3</b>	08
<b>Module – 4</b> Classes and objects, Classes and functions, Classes and methods <b>Textbook 2: Chapters 15 – 17</b> <b>RBT: L1, L2, L3</b>	08
<b>Module – 5</b> Networked programs, Using Web Services, Using databases and SQL <b>Textbook 1: Chapters 12– 13, 15</b> <b>RBT: L1, L2, L3</b>	08

**Course Outcomes:** After studying this course, students will be able to

- Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.
- Demonstrate proficiency in handling Strings and File Systems.
- Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.
- Interpret the concepts of Object-Oriented Programming as used in Python.
- Implement exemplary applications related to Network Programming, Web Services and Databases in Python.

**Question paper pattern:**

- The question paper will have ten questions.
- Each full Question consisting of 20 marks

## COMMUNICATION THEORY

Course Code	: 18EC751	CIE Marks	:40
Lecture Hours/Week	: 03	SEE Marks	:60
Total Number of Lecture Hours	: 40 (08 Hrs / Module)	Exam Hours	:03
CREDITS – 03			

**Course Learning Objectives:** This course will enable students to:

- Describe essential elements of an electronic communications.
- Understand Amplitude, Frequency & Phase modulations, and Amplitude demodulation.
- Explain the basics of sampling and quantization.
- Understand the various digital modulation schemes.
- The concepts of wireless communication.

### Module-1

**Introduction to Electronic Communications:** Historical perspective, Electromagnetic frequency spectrum, signal and its representation, Elements of electronic communications system, primary communication resources, signal transmission concepts, Analog and digital transmission, Modulation, Concept of frequency translation, Signal radiation and propagation  
(Text 1: 1.1 to 1.10)

L1, L2

### Module-2

**Noise:** Classification and source of noise (TEXT 1:3.1)

**Amplitude Modulation Techniques:** Types of analog modulation, Principle of amplitude modulation, AM power distribution, Limitations of AM,  
(TEXT 1: 4.1,4.2, 4.4, 4.6)

**Angle Modulation Techniques:** Principles of Angle modulation, Theory of FM-basic Concepts, Theory of phase modulation (TEXT 1: 5.1,5.2, 5.5)

**Analog Transmission and Reception:** AM Radio transmitters, AM Radio Receivers  
(TEXT 1:6.1,6.2)

L1, L2

### Module-3

**Sampling Theorem and pulse Modulation Techniques:** Digital Versus analog Transmissions, Sampling Theorem, Classification of pulse modulation techniques, PAM, PWM, PPM, PCM, Quantization of signals  
(TEXT 1: 7.1 to 7.8)

L1, L2

#### Module-4

**Digital Modulation Techniques:** Types of digital Modulation, ASK,FSK,PSK,QPSK

(TEXT 1: 9.1 to 9.5)

**Source and Channel Coding:** Objective of source coding, source coding technique, Shannon's source coding theorem, need of channel coding, Channel coding theorem, error control and coding

(TEXT 1: 11.1 to 11.3, 11.8, 11.9,11.12)

L1, L2

#### Module-5

**Evolution of wireless communication systems:** Brief History of wireless communications, Advantages of wireless communication, disadvantages of wireless communications, wireless network generations, Comparison of wireless systems, Evolution of next-generation networks, Applications of wireless communication

(TEXT 2: 1.1 to 1.7)

**Principles of Cellular Communications:** Cellular terminology, Cell structure and Cluster, Frequency reuse concept, Cluster size and system capacity, Method of locating cochannel cells, Frequency reuse distance

(TEXT 2: 4.1 to 4.7)

L1, L2

**Course Outcomes:** At the end of the course, students will be able:

1. Describe operation of communication systems.
2. Understand the techniques of Amplitude and Angle modulation.
3. Understand the concept of sampling and quantization.
4. Understand the concepts of different digital modulation techniques.
5. Describe the principles of wireless communications system.

#### Question paper pattern:

- Examination will be conducted for 100 marks with question paper containing 10 full questions, each of 20 marks.
- Each full question can have a maximum of 4 sub questions.
- There will be 2 full questions from each module covering all the topics of the module.
- Students will have to answer 5 full questions, selecting one full question from each module.
- The total marks will be proportionally reduced to 60 marks as SEE marks is 60.

**B. E. CIVIL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**  
**SEMESTER - VII**

**ENVIRONMENTAL PROTECTION AND MANAGEMENT**

Course Code	18CV753	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	3	Exam Hours	03

**Course Learning Objectives:** This course will enable students to gain knowledge in Environmental protection and Management systems

**Module -1**

**Environmental Management Standards:** Unique Characteristics of Environmental Problems - Systems approach to Corporate environmental management - Classification of Environmental Impact Reduction Efforts - Business Charter for Sustainable Production and Consumption – Tools, Business strategy drivers and Barriers - Evolution of Environmental Stewardship. Environmental Management Principles - National policies on environment, abatement of pollution and conservation of resources - Charter on Corporate responsibility for Environmental protection.

**Module -2**

**Environmental Management Objectives:** Environmental quality objectives – Rationale of Environmental standards: Concentration and Mass standards, Effluent and stream standards, Emission and ambient standards, Minimum national standards, environmental performance evaluation: Indicators, benchmarking. Pollution control Vs Pollution Prevention - Opportunities and Barriers – Cleaner production and Clean technology, closing the loops, zero discharge technologies.

**Module -3**

**Environmental Management System:** EMAS, ISO 14000 - EMS as per ISO 14001– benefits and barriers of EMS – Concept of continual improvement and pollution prevention - environmental policy – initial environmental review – environmental aspect and impact analysis – legal and other requirements- objectives and targets – environmental management programs – structure and responsibility – training awareness and competence- communication – documentation and document control – operational control – monitoring and measurement – management review.

**Module -4**

**Environmental Audit:** Environmental management system audits as per ISO 19011- – Roles and qualifications of auditors - Environmental performance indicators and their evaluation – Non conformance – Corrective and preventive actions -compliance audits – waste audits and waste minimization planning – Environmental statement (form V) - Due diligence audit.

**Module -5**

**Applications:** Applications of EMS, Waste Audits and Pollution Prevention Control: Textile, Sugar, Pulp & Paper, Electroplating, , Tanning industry. Hazardous Wastes - Classification, characteristics Treatment and Disposal Methods, Transboundary movement, disposal.

**Course outcomes:** After studying this course, students will be able to:

1. Appreciate the elements of Corporate Environmental Management systems complying to international environmental management system standards.
2. Lead pollution prevention assessment team and implement waste minimization options.
3. Develop, Implement, maintain and Audit Environmental Management systems for Organizations.

**Question paper pattern:**

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.
- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

**Reference Books:**

1. Christopher Sheldon and Mark Yoxon, "Installing Environmental management Systems – a step by step guide" Earthscan Publications Ltd, London, 1999.
2. ISO 14001/14004: Environmental management systems – Requirements and Guidelines – International

**B. E. MECHANICAL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**

Open Elective-B (Semester VII)

**ENERGY AND ENVIRONMENT**

Course Code	18ME751	CIE Marks	40
Teaching Hours / Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

**Course Learning Objectives:**

- To understand the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of various energy supplies.
- To introduce various aspects of environmental pollution and its control.
- To understand the causes and remedies related to social issues like global warming, ozone layer depletion, climate change etc.
- To introduce various acts related to prevention and control of pollution of water and air, forest protection act, wild life protection act etc.

**Module-1**

Basic Introduction to Energy: Energy and power, forms of energy, primary energy sources, energy flows, world energy production and consumption, Key energy trends in India: Demand, Electricity, Access to modern energy, Energy production and trade, Factors affecting India's energy development: Economy and demographics Policy and institutional framework, Energy prices and affordability, Social and environmental aspects, Investment.

**Module-2**

Energy storage systems: Thermal energy storage methods, Energy saving, Thermal energy storage systems  
 Energy Management: Principles of Energy Management, Energy demand estimation, Energy pricing  
 Energy Audit: Purpose, Methodology with respect to process Industries, Characteristic method employed in *Certain Energy Intensive Industries*

**Module-3**

Environment: Introduction, Multidisciplinary nature of environmental studies- Definition, scope and importance, Need for public awareness.  
 Ecosystem: Concept, Energy flow, Structure and function of an ecosystem. Food chains, food webs and ecological pyramids, Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystems, Ecological succession.

**Module-4**

Environmental Pollution: Definition, Cause, effects and control measures of - Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution and Nuclear hazards, Solid waste Management, Disaster management Role of an individual in prevention of pollution, Pollution case studies.

**Module-5**

Social Issues and the Environment: Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation.

**Group assignments:**

Assignments related to e-waste management; Municipal solid waste management; Air pollution control systems; Water treatment systems; Wastewater treatment plants; Solar heating systems; Solar power plants; Thermal power plants; Hydroelectric power plants; Biofuels; Environmental status assessments; Energy status assessments etc.

**Course Outcomes:** At the end of the course, the student will be able to:



K. S. SCHOOL OF ENGINEERING AND MANAGEMENT - 560 062

Department of Civil Engineering  
Academic year: 2022-2023 (Odd Semester)

Date: 25/07/2022

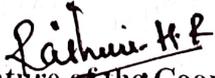
Semester: - VII

Subject: - Communication theory (18EC751)

Offered by: - Department of Electronics and communication

List of students opted open elective offered by Department of Electronics and communication.

Sl No	USN	STUDENT NAME
1	1KG20CV407	NAVEEN KUMAR S

  
Signature of the Coordinator

  
Head of the Department

25/7/2022

Professor & Head  
Dept. of Civil Engineering  
K.S. Group of Institutions  
K.S. School of Engineering & Management  
Bangalore-560 062





K. S. SCHOOL OF ENGINEERING AND MANAGEMENT - 560 062

Department of Civil Engineering  
Academic year: 2022-2023 (Odd Semester)

Date: 25/07/2022

Semester: - VII

Subject: - Python application programming (18CS752)

Offered by: - Department of Computer science

List of students opted open elective offered by Department of Computer science.

SI No	USN	STUDENT NAME
1	1KG20CV400	ARJUNGOWDA D N

*Pashmi.H.R*  
Signature of the Coordinator

*W.Kelle*  
Head of the Department

*25/7/2022*

Professor & Head

Dept. of Civil Engineering

K.S. Group of Institutions

K.S. School of Engineering & Management

Bangalore-560 062

*Monisha.S*



K. S. SCHOOL OF ENGINEERING AND MANAGEMENT - 560 062

**Department of Civil Engineering**

Academic year: 2022-2023 (Odd Semester)

Date: 25/07/2022

Semester: - VII

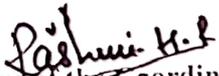
Subject: - Energy and Environment (18ME751)

Offered by: - Department of Mechanical Engineering

List of students opted open elective offered by Department of Mechanical Engineering.

SI No	USN	STUDENT NAME
1	1KG17CV011	GURUPRASHANTH M
2	1KG18CV005	BANASHREE B
3	1KG18CV006	CHETHAN M
4	1KG18CV009	K N UDAY
5	1KG18CV010	L SUHAS
6	1KG18CV018	R C RAMACHANDRA GOWDA
7	1KG18CV024	SANTHOSH KUMAR D
8	1KG19CV001	A CHARAN
9	1KG19CV002	BHARATH S KADAM
10	1KG19CV004	H SRINITISH
11	1KG19CV005	HARSHITHA S
12	1KG19CV006	KEERTHANA L
13	1KG19CV007	L LOKESH CHOWDARY
14	1KG19CV009	MAMRUTHA M
15	1KG19CV012	MOHAMMED SHOAIB AHMED
16	1KG19CV013	NISHCHITHA N
17	1KG19CV014	P VIJAY
18	1KG19CV015	PKEETHI P
19	1KG19CV017	SALMAN BASHIR
20	1KG19CV018	SAMARTHA S
21	1KG19CV019	SIDDANNA GUDA
22	1KG19CV020	SIDDHARTHA S
23	1KG19CV021	SKANDA N
24	1KG19CV022	SUHAIL ALTAZ DAR
25	1KG19CV023	SUNEEL NINGANAGOUDA PATIL
26	1KG19CV024	UMESH KUMAR SINGH
27	1KG20CV401	BHARGAV M

28	1KG20CV402	JAYAPRASAD YADAV
29	1KG20CV403	KARTHICK NAIDU A
30	1KG20CV404	KISHORE S
31	1KG20CV405	KRISHNAPRASAD
32	1KG20CV406	MONISHA R P
33	1KG20CV408	PRAJWAL L V
34	1KG20CV409	RAJULA SAI JITHIN
35	1KG20CV410	RANJITHA P M
36	1KG20CV411	SADASHIVA M
37	1KG20CV412	SANDESH K N
38	1KG20CV413	SHWETHA M A
39	1KG20CV414	SRINIDHI G JOSHI
40	1KG20CV415	VINODH M

  
Signature of the Coordinator



  
Head of the Department  
25/7/2022

Professor & Head  
Dept. of Civil Engineering  
K.S. Group of Institutions  
K.S. School of Engineering & Management  
Bangalore-560062



CIRCULAR

Date: 15/07/2022

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Department of Mechanical Engineering	18ME751	Energy and Environment	Mr Prabhu K S
Department of Computer science	18CS752	Python application programming	Mr Deepak M D Mrs Jayasubha J Mrs Nagaveni B Nimbal Mrs Nita Meshram
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Syllabus is attached for further information

CC to:

CSE

ECE

Civil

Mechanical

Electrical

*Kohas*  
*h.m. - 15/7/22*  
*15/7*

*W. Kelle*

*17*

*16/7/2022*

*15. Rama*  
Principal  
*15/7/22*

Dr. K. RAMA NARASIMHA  
Principal/Director  
K S School of Engineering and Management  
Bengaluru - 560 109