



SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

Vidya Nagar, Palissery, Karukutty, Kerala 683576

CRITERIA 1

CURRICULAR ASPECTS

1.3: Curriculum Enrichment



1.3.1: Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in transacting the Curriculum

- Curricular Activities
- Co- Curricular Activities



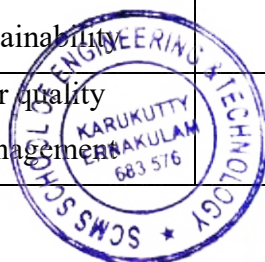
Curricular Activities

A student's education can benefit greatly by involvement in extracurricular activities, which can also help them become successful outside of the classroom. In order to tackle the overarching concerns pertaining to Human Values, Professional Ethics, Gender, Environment, and Sustainability, SSET has integrated multiple courses into its diverse curricula.

List of courses

Courses with issues relevant to Environmental Sustainability

Sl.No	Course Name	Programme Name	Semester
1	Sustainable Engineering	B.Tech	III
2	Disaster Management	B.Tech	V
3	Environmental Impact Assessment	B.Tech	VI
4	Environmental Engineering	B.Tech	VI
5	Environment Impact Assessment (Non-Departmental Elective)	B.Tech	VII
6	Natural Disasters and Mitigation (Non-Departmental Elective)	B.Tech	VII
7	Applied Earth systems	B.Tech	VII
8	Climate change and sustainability	B.Tech	VIII
9	Air quality management	B.Tech	VIII



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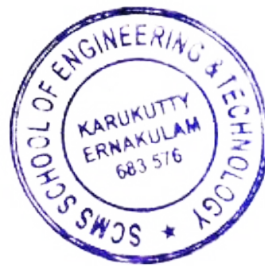


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Courses with issues relevant to Professional Ethics/ Gender equality/ Human values

Sl.No	Course Name	Programme Name	Semester
1	Life skills	B. Tech	I
2	Professional Communication	B. Tech	II
3	Professional Ethics	B. Tech	III
4	Constitution of India	B. Tech	IV




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Co-Curricular Activities

To integrate issues relevant to gender, environment and sustainability, human values and professional ethics, the institution has conducted various activities.

List of activities

Activities related to gender/human values/professional ethics/environment and sustainability

<u>Sl. No</u>	<u>Name of program</u>	<u>Year</u>
1	Cleaning Campus	2018-2019
2	Beach Evacuation	2018-2019
3	Pond Cleaning	2018-2019
4	Environment Day	2018-2019
5	Dengue Awareness	2018-2019
6	Kochi Transportation	2018-2019
7	Punarijani – 6 Day Camp	2018-2019
8	Disaster Management	2018-2019
9	Independence Day Celebration 2018	2018-2019
10	Meloor Waste Management	2018-2019
11	Gandhi Jayanthi Observance- Suchitwa Mission Green Campus Clean Campus, Debate, Bio Farming, Relief Kit Packing	2018-2019
12	Organic Farming	2018-2019
13	Thiruvairanikulam Temple Green Protocol	2018-2019
14	Poster Making On Road Safety	2018-2019
15	Poster Making On Pollution	2018-2019
16	Orientation On Water Conservation	2018-2019
17	Placement Volunteering	2018-2019
18	Orientation Through Group Dynamics	2018-2019
19	Orientation Philosophy Of NSS	2018-2019
20	Food Collection For Relief Camp	2018-2019
21	Damage Survey	2018-2019
22	Kit Distribution	2018-2019
23	Relief Kit Preparation	2018-2019
24	Core Committee Meeting - 2018	2018-2019
25	Blood Donation Camp	2018-2019
26	Charity Doll Making	2018-2019
27	Anti - Narcotics Campaign	2018-2019

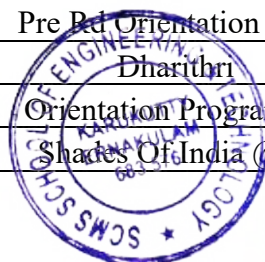
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28	Poster Making - Cancer	2018-2019
29	Debate	2018-2019
30	Poster Making – Smoking Kills	2018-2019
31	Poster Making - Social Media Influence In Youth	2018-2019
32	Biofarming Let's Go Back To Green	2018-2019
33	Orientation Class- Nss	2018-2019
34	ORIENTATION Group Discussion	2018-2019
35	Enrollment And Orientation Program	2018-2019
36	Environmental Day	2019-2020
37	Clean Ernakulam Project	2019-2020
38	Thaiveru	2019-2020
39	Orientation Classes	2019-2020
40	Badge Making	2019-2020
41	Green Protocol - Thiruvairanikulam Work	2019-2020
42	Volunteers Meet	2019-2020
43	A Helping Hand To The Fisherman At Chellanam	2019-2020
44	Leadership Training Program	2019-2020
45	Visit To A Very Special Place	2019-2020
46	Blood Donation Camp	2019-2020
47	Republic Day Celebration	2019-2020
48	Short Film Making	2019-2020
49	Environment Day	2020-2021
50	Green Protocol - Ponthalir- A Golden Bud	2020-2021
51	Ozone Day Celebration	2020-2021
52	Re-Use Challenge	2020-2021
53	General Orientation For Nss Volunteers	2020-2021
54	General Orientation	2020-2021
55	Re-Use Challenge	2020-2021
56	Ozone Day Celebration	2020-2021
57	Yoga Day Camp	2020-2021
58	Dhooth	2020-2021
59	Independence Day Celebration	2020-2021
60	Thumbapoo - Onam Celebration	2020-2021
61	Teacher's Day Celebration	2020-2021
62	Nss Day Celebration	2020-2021
63	Gandhi Jayanti	2020-2021
64	Online Get-Together	2020-2021
65	Pre Rd Orientation Meet	2020-2021
66	Dharithri	2021-2022
67	Orientation Programme	2021-22
68	Shades Of India @75	2021-22



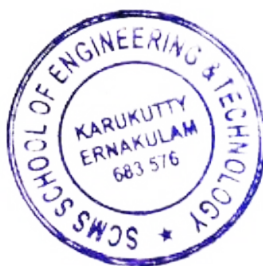
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69	Onapulari-Online Pulari	2021-22
70	Bis Club Introduction And Awareness Campaign	2022-2023
71	Introspection To Insight: Life Skill Training	2022-2023
72	Power Of Extracurriculars In Unlocking Opportunities	2022-2023
73	The Role Of Effective Communication In Entrepreneurial Success	2022-2023
74	Debate Competition On World Television Day	2022-2023
75	World Health Day	2022-2023
76	National Postel Day	2022-2023
77	Street Play On Drug Abuse And Illicit Trafficking	2022-2023




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Syllabus of courses
Environment Sustainability

CODE MCN201	SUSTAINABLE ENGINEERING	CATEGORY	L	T	P	CREDIT
			2	0	0	NIL

Preamble: Objective of this course is to inculcate in students an awareness of environmental issues and the global initiatives towards attaining sustainability. The student should realize the potential of technology in bringing in sustainable practices.

Prerequisite: NIL

Course Outcomes: After the completion of the course the student will be able to

CO 1	Understand the relevance and the concept of sustainability and the global initiatives in this direction
CO 2	Explain the different types of environmental pollution problems and their sustainable solutions
CO 3	Discuss the environmental regulations and standards
CO 4	Outline the concepts related to conventional and non-conventional energy
CO 5	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1						2	3					2
CO 2						2	3					2
CO 3						2	3					2
CO 4						2	3					2
CO 5						2	3					2

Assessment Pattern

Mark distribution

Bloom's Category	Continuous Assessment Tests		End Semester Examination
	1	2	
Remember	20	20	40
Understand	20	20	40
Apply	10	10	20
Analyse			
Evaluate			
Create			

Continuous Internal Evaluation Pattern:

Attendance : 10 marks
 Continuous Assessment Test (2 numbers) : 25 marks
 Assignment/Quiz/Course project : 15 marks

End Semester Examination Pattern: There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Course Level Assessment Questions

Course Outcome 1 (CO1): Understand the relevance and the concept of sustainability and the global initiatives in this direction

1. Explain with an example a technology that has contributed positively to sustainable development.
2. Write a note on Millennium Development Goals.

Course Outcome 2 (CO2): Explain the different types of environmental pollution problems and their sustainable solutions

1. Explain the 3R concept in solid waste management?
2. Write a note on any one environmental pollution problem and suggest a sustainable solution.
3. In the absence of green house effect the surface temperature of earth would not have been suitable for survival of life on earth. Comment on this statement.

Course Outcome 3(CO3): Discuss the environmental regulations and standards

1. Illustrate Life Cycle Analysis with an example of your choice.
2. “Nature is the most successful designer and the most brilliant engineer that has ever evolved”. Discuss.

Course Outcome 4 (CO4): Outline the concepts related to conventional and non-conventional energy

1. Suggest a sustainable system to generate hot water in a residential building in tropical climate.
2. Enumerate the impacts of biomass energy on the environment.

Course Outcome 5 (CO5): Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles

1. Suggest suitable measures to make the conveyance facilities used by your institution sustainable.

Model Question paper

Part A

(Answer all questions. Each question carries 3 marks each)

1. Define sustainable development.
2. Write a short note on Millennium Development Goals.
3. Describe carbon credit.
4. Give an account of climate change and its effect on environment.
5. Describe biomimicry? Give two examples.
6. Explain the basic concept of Life Cycle Assessment.
7. Name three renewable energy sources.

8. Mention some of the disadvantages of wind energy.
9. Enlist some of the features of sustainable habitat.
10. Explain green engineering.

Part B

(Answer one question from each module. Each question carries 14 marks)

11. Discuss the evolution of the concept of sustainability. Comment on its relevance in the modern world.

OR

12. Explain Clean Development Mechanism.
13. Explain the common sources of water pollution and its harmful effects.

OR

14. Give an account of solid waste management in cities.
15. Explain the different steps involved in the conduct of Environmental Impact Assessment.

OR

16. Suggest some methods to create public awareness on environmental issues.
17. Comment on the statement, "Almost all energy that man uses comes from the Sun".

OR

18. Write notes on:
 - a. Land degradation due to water logging.
 - b. Over exploitation of water.

19. Discuss the elements related to sustainable urbanisation.

OR

20. Discuss any three methods by which you can increase energy efficiency in buildings.

Syllabus

Sustainability- need and concept, technology and sustainable development-Natural resources and their pollution, Carbon credits, Zero waste concept. Life Cycle Analysis, Environmental Impact Assessment studies, Sustainable habitat, Green buildings, green materials, Energy, Conventional and renewable sources, Sustainable urbanization, Industrial Ecology.

Module 1

Sustainability: Introduction, concept, evolution of the concept; Social, environmental and economic sustainability concepts; Sustainable development, Nexus between Technology and Sustainable development; Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), Clean Development Mechanism (CDM).

Module 2

Environmental Pollution: Air Pollution and its effects, Water pollution and its sources, Zero waste concept and 3 R concepts in solid waste management; Greenhouse effect, Global warming, Climate change, Ozone layer depletion, Carbon credits, carbon trading and carbon foot print, legal provisions for environmental protection.

Module 3

Environmental management standards: ISO 14001:2015 frame work and benefits, Scope and goal of Life Cycle Analysis (LCA), Circular economy, Bio-mimicking, Environment Impact Assessment (EIA), Industrial ecology and industrial symbiosis.

Module 4

Resources and its utilisation: Basic concepts of Conventional and non-conventional energy, General idea about solar energy, Fuel cells, Wind energy, Small hydro plants, bio-fuels, Energy derived from oceans and Geothermal energy.

Module 5

Sustainability practices: Basic concept of sustainable habitat, Methods for increasing energy efficiency in buildings, Green Engineering, Sustainable Urbanisation, Sustainable cities, Sustainable transport.

Reference Books

1. Allen, D. T. and Shonnard, D. R., Sustainability Engineering: Concepts, Design and Case Studies, Prentice Hall.
2. Bradley. A.S; Adebayo,A.O., Maria, P. Engineering applications in sustainable design and development, Cengage learning
3. Environment Impact Assessment Guidelines, Notification of Government of India, 2006
4. Mackenthun, K.M., Basic Concepts in Environmental Management, Lewis Publication, London, 1998
5. ECBC Code 2007, Bureau of Energy Efficiency, New Delhi Bureau of Energy Efficiency Publications-Rating System, TERI Publications - GRIHA Rating System
6. Ni bin Chang, Systems Analysis for Sustainable Engineering: Theory and Applications, McGraw-Hill Professional.
7. Twidell, J. W. and Weir, A. D., Renewable Energy Resources, English Language Book Society (ELBS).
8. Purohit, S. S., Green Technology - An approach for sustainable environment, Agrobios Publication

MCN	DISASTER MANAGEMENT	Category	L	T	P	CREDIT	YEAR OF INTRODUCTION
301		Non - Credit	2	0	0	Nil	2019

Preamble: The objective of this course is to introduce the fundamental concepts of hazards and disaster management.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to

CO1	Define and use various terminologies in use in disaster management parlance and organise each of these terms in relation to the disaster management cycle (Cognitive knowledge level: Understand).
CO2	Distinguish between different hazard types and vulnerability types and do vulnerability assessment (Cognitive knowledge level: Understand).
CO3	Identify the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk (Cognitive knowledge level: Understand).
CO4	Explain the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sector and community (Cognitive knowledge level: Apply)
CO5	Identify factors that determine the nature of disaster response and discuss the various disaster response actions (Cognitive knowledge level: Understand).
CO6	Explain the various legislations and best practices for disaster management and risk reduction at national and international level (Cognitive knowledge level: Understand).

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		2				2				2		2
CO2	2	3	2		2	2	3			3		2
CO3	2	3	2	2	2	2	3			3		2
CO4	3	3	3		2	2	3					2
CO5	3	3			2	2	3					2
CO6	3					2	3	3				2

Abstract POs defined by National Board of Accreditation			
PO#	Broad PO	PO#	Broad PO
PO1	Engineering Knowledge	PO7	Environment and Sustainability
PO2	Problem Analysis	PO8	Ethics
PO3	Design/Development of solutions	PO9	Individual and team work
PO4	Conduct investigations of complex problems	PO10	Communication
PO5	Modern tool usage	PO11	Project Management and Finance
PO6	The Engineer and Society	PO12	Life long learning

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination Marks
	Test 1 (Marks)	Test 2 (Marks)	
Remember	20	20	20
Understand	50	50	50
Apply	30	30	30
Analyze			
Evaluate			
Create			

Mark Distribution

Total Marks	CIE Marks	ESE Marks	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance : 10 marks

Continuous Assessment - Test : 25 marks

Continuous Assessment - Assignment : 15 marks

Internal Examination Pattern:

Each of the two internal examinations has to be conducted out of 50 marks. First series test shall be preferably conducted after completing the first half of the syllabus and the second series test shall be preferably conducted after completing remaining part of the syllabus. There will be two parts: Part A and Part B. Part A contains 5 questions (preferably, 2 questions each from the completed modules and 1 question from the partly completed module), having 3 marks for each question adding up to 15 marks for part A. Students should answer all questions from Part A.

Part B contains 7 questions (preferably, 3 questions each from the completed modules and 1 question from the partly completed module), each with 7 marks. Out of the 7 questions, a student should answer any 5.

End Semester Examination Pattern:

There will be two parts; Part A and Part B. Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which a student should answer any one. Each question can have maximum 2 sub-divisions and carries 14 marks.

SYLLABUS

MCN 301 Disaster Management

Module 1

Systems of earth

Lithosphere- composition, rocks, soils; Atmosphere-layers, ozone layer, greenhouse effect, weather, cyclones, atmospheric circulations, Indian Monsoon; hydrosphere- Oceans, inland water bodies; biosphere

Definition and meaning of key terms in Disaster Risk Reduction and Management- disaster, hazard, exposure, vulnerability, risk, risk assessment, risk mapping, capacity, resilience, disaster risk reduction, disaster risk management, early warning systems, disaster preparedness, disaster prevention, disaster mitigation, disaster response, damage assessment, crisis counselling, needs assessment.

Module 2

Hazard types and hazard mapping; Vulnerability types and their assessment- physical, social, economic and environmental vulnerability.

Disaster risk assessment –approaches, procedures

Module 3

Disaster risk management -Core elements and phases of Disaster Risk Management

Measures for Disaster Risk Reduction – prevention, mitigation, and preparedness.

Disaster response- objectives, requirements; response planning; types of responses.

Relief; international relief organizations.

Module 4

Participatory stakeholder engagement; Disaster communication- importance, methods, barriers; Crisis counselling

Capacity Building: Concept – Structural and Non-structural Measures, Capacity Assessment; Strengthening Capacity for Reducing Risk

Module 5

Common disaster types in India; Legislations in India on disaster management; National disaster management policy; Institutional arrangements for disaster management in India.

The Sendai Framework for Disaster Risk Reduction- targets, priorities for action, guiding principles

Reference Text Book

1. R. Subramanian, Disaster Management, Vikas Publishing House, 2018
2. M. M. Sulphery, Disaster Management, PHI Learning, 2016
3. UNDP, Disaster Risk Management Training Manual, 2016
4. United Nations Office for Disaster Risk Reduction, Sendai Framework for Disaster Risk Reduction 2015-2030, 2015

Sample Course Level Assessment Questions

Course Outcome 1 (CO1):

1. What is the mechanism by which stratospheric ozone protects earth from harmful UV rays?
2. What are disasters? What are their causes?
3. Explain the different types of cyclones and the mechanism of their formation
4. Explain with examples, the difference between hazard and risk in the context of disaster management
5. Explain the following terms in the context of disaster management (a) exposure (b) resilience (c) disaster risk management (d) early warning systems, (e) damage assessment (f) crisis counselling (g) needs assessment

Course Outcome 2 (CO2):

1. What is hazard mapping? What are its objectives?
2. What is participatory hazard mapping? How is it conducted? What are its advantages?
3. Explain the applications of hazard maps
4. Explain the types of vulnerabilities and the approaches to assess them

Course Outcome 3 (CO3):

1. Explain briefly the concept of 'disaster risk'

2. List the strategies for disaster risk management ‘before’, ‘during’ and ‘after’ a disaster
3. What is disaster preparedness? Explain the components of a comprehensive disaster preparedness strategy

Course Outcome 4 (CO4):

1. What is disaster prevention? Distinguish it from disaster mitigation giving examples
2. What are the steps to effective disaster communication? What are the barriers to communication?
3. Explain capacity building in the context of disaster management

Course Outcome 5 (CO5):

1. Briefly explain the levels of stakeholder participation in the context of disaster risk reduction
2. Explain the importance of communication in disaster management
3. Explain the benefits and costs of stakeholder participation in disaster management
4. How are stakeholders in disaster management identified?

Course Outcome 6 (CO6):

1. Explain the salient features of the National Policy on Disaster Management in India
2. Explain the guiding principles and priorities of action according to the Sendai Framework for Disaster Risk Reduction
3. What are Tsunamis? How are they caused?
4. Explain the earthquake zonation of India

Model Question paper

QP CODE:

PAGES:3

Reg No: _____

Name : _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIFTH SEMESTER B.TECH DEGREE EXAMINATION, MONTH & YEAR

Course Code: MCN 301

Course Name: Disaster Management

Max.Marks:100

Duration: 3 Hours

PART A

Answer all Questions. Each question carries 3 Marks

1. What is the mechanism by which stratospheric ozone protects earth from harmful UV rays?
2. What are disasters? What are their causes?
3. What is hazard mapping? What are its objectives?
4. Explain briefly the concept of 'disaster risk'
5. List the strategies for disaster risk management 'before', 'during' and 'after' a disaster
6. What is disaster prevention? Distinguish it from disaster mitigation giving examples
7. Briefly explain the levels of stakeholder participation in the context of disaster risk reduction
8. Explain the importance of communication in disaster management
9. What are Tsunamis? How are they caused?
10. Explain the earthquake zonation of India

Part B

Answer any one Question from each module. Each question carries 14 Marks

11. a. Explain the different types of cyclones and the mechanism of their formation [10]
b. Explain with examples, the difference between hazard and risk in the context of disaster management [4]

OR

12. Explain the following terms in the context of disaster management [14]
(a) exposure (b) resilience (c) disaster risk management (d) early warning systems, (e) damage assessment (f) crisis counselling (g) needs assessment

13. a. What is participatory hazard mapping? How is it conducted? What are its advantages? [8]
b. Explain the applications of hazard maps [6]

OR

14. Explain the types of vulnerabilities and the approaches to assess them [14]
15. a. Explain the core elements of disaster risk management [8]
b. Explain the factors that decide the nature of disaster response [6]

OR

16. a. What is disaster preparedness? Explain the components of a comprehensive disaster preparedness strategy [6]
b. Explain the different disaster response actions [8]
17. a. Explain the benefits and costs of stakeholder participation in disaster management [10]
b. How are stakeholders in disaster management identified? [4]

OR

18. a. What are the steps to effective disaster communication? What are the barriers to communication? [7]
b. Explain capacity building in the context of disaster management [7]

19. Explain the salient features of the National Policy on Disaster Management in India

[14]

OR

20. Explain the guiding principles and priorities of action according to the Sendai Framework for Disaster Risk Reduction

[14]

Teaching Plan

	Module 1	5 Hours
1.1	Introduction about various Systems of earth, Lithosphere-composition, rocks, Soils; Atmosphere-layers, ozone layer, greenhouse effect, weather	1 Hour
1.2	Cyclones, atmospheric circulations, Indian Monsoon; hydrosphere-Oceans, inland water bodies; biosphere	1 Hour
1.3	Definition and meaning of key terms in Disaster Risk Reduction and Management- disaster, hazard,	1 Hour
1.4	Exposure, vulnerability, risk, risk assessment, risk mapping, capacity, resilience, disaster risk reduction, Disaster risk management, early warning systems	1 Hour
1.5	Disaster preparedness, disaster prevention, disaster, Mitigation, disaster response, damage assessment, crisis counselling, needs assessment.	1 Hour
	Module 2	5 Hours
2.1	Various Hazard types, Hazard mapping; Different types of Vulnerability types and their assessment	1 Hour
2.2	Vulnerability assessment and types, Physical and social vulnerability	1 Hour
2.3	Economic and environmental vulnerability, Core elements of disaster risk assessment	1 Hour
2.4	Components of a comprehensive disaster preparedness strategy approaches, procedures	1 Hour
2.5	Different disaster response actions	1 Hour
	Module 3	5 Hours
3.1	Introduction to Disaster risk management, Core elements of Disaster Risk Management	1 Hour
3.2	Phases of Disaster Risk Management, Measures for Disaster Risk Reduction	1 Hour
3.3	Measures for Disaster prevention, mitigation, and preparedness.	1 Hour

3.4	Disaster response- objectives, requirements. Disaster response planning; types of responses.	1 Hour
3.5	Introduction- Disaster Relief, Relief; international relief organizations.	1 Hour
	Module 4	5 Hours
4.1	Participatory stakeholder engagement	1 Hour
4.2	Importance of disaster communication.	1 Hour
4.3	Disaster communication- methods, barriers. Crisis counselling	1 Hour
4.4	Introduction to Capacity Building. Concept – Structural Measures, Non-structural Measures.	1 Hour
4.5	Introduction to Capacity Assessment, Capacity Assessment; Strengthening, Capacity for Reducing Risk	1 Hour
	Module 5	5 Hours
5.1	Introduction-Common disaster types in India.	1 Hour
5.2	Common disaster legislations in India on disaster management	1 Hour
5.3	National disaster management policy, Institutional arrangements for disaster management in India.	1 Hour
5.4	The Sendai Framework for Disaster Risk Reduction and targets	1 Hour
5.5	The Sendai Framework for Disaster Risk Reduction-priorities for action, guiding principles	1 Hour

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination
	1	2	
Remember	10	10	15
Understand	10	10	15
Apply	15	15	35
Analyse	15	15	35
Evaluate			
Create			

Mark distribution

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance : 10 marks
Continuous Assessment Test (2 numbers) : 25 marks
Assignment/Quiz/Course project : 15 marks

End Semester Examination Pattern: There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question carries 14 marks and can have maximum 2 sub-divisions.

Course Level Assessment Questions

CO1: To be able to appreciate the role of environmental engineering in improving the quality of environment

1. Explain from a health perspective the need for treating drinking water and safe disposal of waste water
2. How to dispose the sludge from waste water treatment plant safely?
3. How to remove colloidal range particles from water to satisfy drinking water norms?

CO 2: To be able to plan for collection and conveyance of water and waste water

1. How design period is decided for water supply schemes?
2. Discuss various types of pumps used in a water supply scheme
3. Compare separate and combined sewerage systems

CO3: To be able to enhance natural water purification processes in an engineered environment

1. Discuss different types of aerators with their advantage and limitations
2. Design a continuous flow rectangular sedimentation tank for a population of 20,000 persons with an average per capita demand of 120 litres per day. Assume a detention period of 6 hours.
3. Design an activated sludge plant to treat 6.0 Mld of sewage with BOD of 210 mg/l. The final effluent should be 30 mg/l

CO4: To be able to decide on appropriate technology for water and waste water treatment

1. Compare aerobic and anaerobic biological processes for treating waste water
2. Explain in detail the different disinfection techniques available for water and waste water treatment?
3. Discuss the treatment method available for high strength waste water

SYLLABUS

Module 1

Introduction to environmental engineering and role of environmental engineers-enhancing natural purification processes in an engineered environment-public health perspective for treating water and waste water - 1hr

Water quantity estimation:

Population forecast- water demand estimation-types of demand- demand fluctuation -3 hrs

Estimation for waste water quantity:

Dry weather flow and storm water flow-population equivalent-design period - 2 hrs

Collection and conveyance:

water intake structures- -gravity flow and pressure flow systems- 1 hr

Systems of sewerage: separate and combined-types of pumps for water and waste water conveyance - 2 hrs

Module 2

Layout plan of a conventional water treatment plant- site selection-concept of unit operations and unit processes-Screening-types of screens -aeration -aerator types- 3 hrs

Theory and principles of sedimentation-Stoke's law-Types of settling -Design of plain sedimentation tanks - 4 hrs

Mechanisms of coagulation and flocculation, popular coagulants and feeding devices -2 hrs

Module 3

Filtration of water-theory of filtration-types of filters - design of arapid sand filter - 3hrs

Disinfection of water - various methods - advantages and limitations -2 hrs

Lay out of water distribution network-types-methods of distribution-network analysis -Hardy cross and equivalent pipe methods-4 hrs

Module 4

Layout plan of a conventional waste water treatment plant- site selection- concept of primary, secondary and tertiary treatment- 1hr

Unit operations in waste water- primary treatment -equalization of flow- 2hrs

Secondary treatment methods-basic concepts of biological unit processes-aerobic and anaerobic- attached and suspended growth processes (Concepts only)- 2 hr

Activated sludge process- basic concepts-design of a conventional Activated Sludge Plant - 3hrs

Trickling filter (Concept only)- types- construction & operation - 1 hr

Module 5

Anaerobic treatment of high strength waste water- Up flow Anaerobic Sludge Blanket (UASB) reactor (Concept only)- 2 hrs

Natural waste water treatment systems-Oxidation Ponds and Lagoons-Wetlands and Root-zone systems (Concepts only)- 3 hrs

Low cost sanitation systems- Design of a septic tank and soak-pit - 2 hr

Sludge treatment (concepts only) -thickening- digestion- dewatering- drying- composting- 2hrs

Text Books:

1. Howard S Peavy, Donald R Rowe and George Tchobanoglous, Environmental Engineering, Mc Graw Hill Education , 2013
2. Mackenzie L Davis, David A Cornwell, Introduction to Environmental Engineering, Mc Graw Hill Education, 2014
3. S.K.Garg, Water Supply Engineering, Khanna Publishers. 2010
4. G S Birdie, Water Supply and Engineering, Dhanapat Rai Publishing Company, 2014
5. J. Arceivala, Shyam R. Asolekar, Wastewater Treatment for Pollution Control and Reuse, McGrawhill Education, 2007
6. S.K. Garg, Sewage disposal and air pollution engineering, Khanna Publishers. 2008

References:

1. Metcalf and Eddy, Waste Water Engineering, Tata McGraw Hill publishing Co Ltd, 2003
2. Syed R Qasim, Edward M Motley, Guang Zhu, Water Works Engineering-Planning, Design & Operation, PHI Learning, 2012.
3. Syed R Qasim, Wastewater Treatment Plants-Planning, Design & Operation, CRC Press,1999

Lecture Plan- Environmental Engineering

Module	Topic	Course Outcomes addressed	No. of Lectures
1	Module 1: Total Lecture Hours -9		
1.1	Introduction to environmental engineering and role of environmental engineers-enhancing natural purification processes in an engineered environment-public health perspective for treating water and waste water	CO1	1
1.2	Water and waste water quantity estimation: Population forecast- water demand estimation-types of demand- demand fluctuation	CO2	3
1.3	Estimation for waste water quantity- dry weather flow and storm water flow-population equivalent-design period	CO2	2
1.4	Collection and conveyance: water intake structures- -gravity flow and pressure flow systems-	CO2	1
1.5	Systems of sewerage: separate and combined-types of pumps for water and waste water conveyance	CO2	2
2	Module II: Total Lecture Hours- 9		
2.1	Layout plan of a conventional water treatment plant- site selection-concept of unit operations and unit processes- Screening-types of screens-aeration-aerator types	CO1,CO4	3
2.2	Theory and principles of sedimentation-Stoke's law- Types of settling -Design of plain sedimentation tanks	CO3	4
2.3	Mechanisms of coagulation and flocculation, popular coagulants and feeding devices	CO3	2
3	Module III: Total Lecture Hours-9		
3.1	Filtration of water-theory of filtration-types of filters - design of rapid sand filter	CO3,CO4	3
3.2	Disinfection of water - various methods - advantages and limitations	CO4	2
3.3	Lay out of water distribution network-methods of distribution-network analysis -Hardy cross and equivalent pipe methods	CO4	4
4	Module IV: Total Lecture Hours- 9		

4.1	Layout plan of a conventional waste water treatment plant- site selection- concept of primary, secondary and tertiary treatment	CO1	1
4.2	Unit operations in waste water- primary treatment - equalization of flow	CO3	2
4.3	Secondary treatment methods- basic concepts of biological unit processes-aerobic and anaerobic- attached and suspended growth processes (Concepts only)	CO4	2
4.4	Activated sludge process- basic concepts-design of a conventional Activated Sludge Plant	CO3	3
4.5	Trickling filter (Concept only)- types- construction & operation	CO3	1
5	Module V: Total Lecture Hours- 9		
5.1	Anaerobic treatment of high strength waste water- Up flow Anaerobic Sludge Blanket (UASB) reactor (Concept only)	CO3	2
5.2	Natural waste water treatment systems-Oxidation Ponds and Lagoons-Wetlands and Root-zone systems (Concepts only)	CO3, CO4	3
5.3	Low cost sanitation systems- Design of a septic tank and soak-pit	CO3	2
5.4	Sludge treatment (concepts only) - thickening- digestion- dewatering- drying- composting	CO4	2

Model Question Paper

Reg No.: _____

Name: _____

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION**

Course Code: CET304

Course Name: ENVIRONMENTAL ENGINEERING

Max. Marks: 100

Duration: 3 Hours

Part A

(Answer all questions; each question carries 3 marks)

1. Explain dry weather flow
2. What is an intake?
3. Why screens are used in water and waste water treatment plants?
4. What is hindered settling?
5. Compare slow sand filter and rapid sand filter
6. Explain the principle of disinfection
7. Discuss the unit operations and unit processes in a waste water treatment plant
8. Compare aerobic and anaerobic processes
9. How wetlands treat waste water?
10. Explain the working of a septic tank with a neat sketch

PART B

(Answer one full question from each module, each question carries 14 marks)

11. (a) Explain in brief different methods used for prediction of future population of a city
(9 Marks)

(b) What is fire demand? How will you calculate fire demand (5 Marks)

OR

12. (a) Explain the term "Design Period" (5 Marks)

(b) Forecast the population of the town in the year 2040 from the following data using arithmetic increase method and geometric increase method

Year	1990	2000	2010	2020
Population	13400	19500	28500	36300

(9 Marks)

13. (a) Explain with sketches the types of aerators with advantages and limitations (6 Marks)
 (b) Explain different types of settling (8Marks)

OR

14. (a) Explain the mechanisms of coagulation (5 Marks)
 (b) Design a plain sedimentation tank for treating 6 MLD of water. Make suitable assumption. Prepare a neat sketch (9 Marks)

15. (a) Explain the theory of filtration (5 Marks)
 (b) Explain and compare various disinfection methods (9Marks)

OR

16. Design a rapid sand filter to treat 10 million litres of raw water per day allowing 0.5% of filtered water for backwashing. Half hour per day is used for backwashing. Assume necessary data. (14 Marks)

17. (a) Discuss the role of an equalization tank at a waste water treatment plant (4Marks)
 (b) Discuss in detail various biological processes available for treating waste water (10 marks)

OR

18. (a) Explain primary, secondary and tertiary treatment phases (5 Marks)
 (b) Design an activated sludge plant treat 6.0 Mld of domestic sewage having a BOD of 210 mg/l. The final effluent should have a BOD of 30 mg/l. (9 Marks)

19. (a) Discuss sludge treatment processes for safe disposal (9 Marks)
 (b) Explain the working of a UASB with neat sketch (5 Marks)

OR

20. Discuss natural waste water treatment systems with neat sketches (14 Marks)

CET 362	ENVIRONMENTAL IMPACT ASSESSMENT	CATEGORY	L	T	P	CREDIT	Year of Introduction
		PEC	3	0	0	3	2019

Preamble : This course introduces the methodologies for identifying, predicting, evaluating and mitigating the impacts on environment due to any developmental project or activities. Students will learn how to prepare an impact assessment report and devise an environment management plan. Sufficient background will be provided on the environmental clearance procedures in India.

Prerequisite: NIL

Course Outcomes : After the completion of the course the student will be able

Course Outcome	Description of Course Outcome	Prescribed learning level
CO1	To appreciate the need for minimizing the environmental impacts of developmental activities	Understanding
CO2	To understand environmental legislation & clearance procedure in the country	Remembering, Understanding
CO 3	To apply various methodologies for assessing the environmental impacts of any developmental activity	Applying &Analysing
CO 4	To prepare an environmental impact assessment report	Analysing& Evaluating
CO 5	To conduct an environmental audit	Analysing &Evaluating

Mapping of course outcomes with program outcomes (Minimum requirement)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	-	-	-	-	-	2	2	-	-	-	-	-
CO 2	-	-	-	-	-	2	-	-	-	-	-	-
CO 3	2	-	-	3	2	-	3	-	-	-	-	-
CO4	-	-	-	2	-	2	2	3	-	3	-	-
CO5	-	-	-	2	1	-	2	2	-	2	-	-

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination
	1	2	
Remember	10	10	15
Understand	10	10	15
Apply	15	15	35
Analyse	15	15	35
Evaluate			
Create			

Mark distribution

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance : 10 marks
Continuous Assessment Test (2 numbers) : 25 marks
Assignment/Quiz/Course project : 15 marks

End Semester Examination Pattern: There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question carries 14 marks and can have maximum 2 sub-divisions.

Course Level Assessment Questions

CO1: To be able to appreciate the need for minimizing the environmental impacts of developmental activities

- 1.Explain the evolution of EIA in India
- 2.Explain why EIA is needed for developmental projects.
- 3.What are the different ways in which development projects impact the water quality and quantity?

CO 2: To be able to understand environmental legislation & clearance procedure in the country

- 1.Two municipalities in Kerala plan to set up a Common Municipal Solid Waste Management Facility (CMSWMF). Explain the procedure required for the Environmental Clearance (EC) for the project as per the EIA Notification of 2006.(All CMSWMFs are category B projects)
- 2.Describe the procedure for obtaining environmental clearance according to EIA notification 2006.
- 3.The Environment (Protection) Act, 1986 is called an umbrella legislation. Substantiate the statement.

CO3: To be able to apply various methodologies for assessing the environmental impacts of any developmental activity

- 1.Prepare a simple checklist for assessment of socio economic impact due to the development of a highway.
- 2.Explain overlay mapping as an EIA method
- 3.Explain how to predict the impact of a highway project on air quality

CO4: To be able to prepare an environmental impact assessment report

- 1.Explain the Terms of Reference (ToR) for EIA report of a highway project
- 2.Explain the structure of EIA report
- 3.Explain the importance of an environmental management plan.

CO5: To be able to conduct an environmental audit

- 1.Explain the need for environmental auditing
- 2.What are the different types of environmental audits?
3. Explain the importance of ISO 14001 standard.

SYLLABUS

Module 1

Definition, Need for EIA, Evolution of EIA: Global & Indian scenario -Environmental legislations in India- The Water (Prevention & Control of Pollution) Act 1974, The Air (Prevention & Control of Pollution) Act 1981, The Environmental (Protection) Act 1986- Environmental standards for water, air and noise quality- EIA Notification 2006

Module 2

Environmental clearance process in India: Screening, Scoping, Public Consultation, Appraisal- Form 1-Category of projects-Generic structure of EIA report- Terms of Reference (ToR) -Types of EIA: strategic, regional, sectoral, project level- Rapid EIA and Comprehensive EIA- Initial Environmental Examination (IEE)

Module 3

EIA methodologies: Ad hoc, checklist, matrix, network and overlay-Impact Prediction, Evaluation and Mitigation-Prediction and assessment of the impact on water (surface water and groundwater), air, and noise environment- assessment of ecological impacts and Socio economic Impacts.

Module 4

Environmental Management Plan (EMP): Goal and purpose- Importance of EMP- Content of an EMP- Role of environmental monitoring program

Environment Audit: need for audit- audit types and benefits- environmental audit procedure

ISO 14001 standards: Importance, salient features - Stages in implementation- Benefits

Module 5

EIA case studies (Indian)- a highway project, a hydro electric power plant, an air port project, a quarry mining project and a solid waste management project

Text Books:

1. Larry W Canter, "Environmental Impact Assessment", McGraw Hill Inc. , New York, 1995
2. Betty Bowers Marriott, Environmental Impact Assessment: A Practical Guide, McGraw-Hill Professional, 1997
3. Environmental Impact Assessment, 2003, Y.Anjaneyulu, B.S Publications

References:

1. Lawrence, David P., Environmental Impact Assessment (Practical Solutions to Recurrent Problems), Wiley International, New Jersey.
2. Ministry of Environment & Forests, Govt. of India 2006 EIA Notification
3. Jain, R.K., Urban, L.V. and Stacey, G.S., Environment Impact Analysis, Von Nostrand Reinhold Company.

Lecture Plan- Environmental Impact Assessment

Module	Topic	Course Outcomes addressed	No. of Lectures
1	Module 1: Total Lecture Hours -7		
1.1	Definition, Need for EIA, Evolution of EIA: Global & Indian scenario	CO1	1
1.2	Environmental legislations in India- The Water (Prevention & Control of Pollution) Act 1974, The Air (Prevention & Control of Pollution) Act 1981, The Environmental (Protection) Act 1986	CO2	3
1.3	Environmental standards for water, air and noise quality	CO2	1
1.4	EIA Notification 2006	CO2	2
2	Module II: Total Lecture Hours- 7		
2.1	Environmental clearance process in India: Screening, Scoping, Public Consultation, Appraisal- Form1- Category of projects	CO2	3
2.2	Generic structure of EIA report- Terms of Reference (ToR)	CO4	1
2.3	Types of EIA: strategic, regional, sectoral, project level-	CO3	1
2.4	Rapid EIA and Comprehensive EIA	CO3	1
2.5	Initial Environmental Examination (IEE)	CO3	1
3	Module III: Total Lecture Hours-7		
3.1	EIA methodologies: Ad hoc, checklist, matrix, network and overlay	CO3	3
3.2	Impact Prediction, Evaluation and Mitigation- Prediction and assessment of the impact on water (surface water and groundwater), air, and noise	CO3	2

	environment		
3.3	assessment of ecological impacts and Socio economic Impacts	CO3	2
4	Module IV: Total Lecture Hours- 7		
4.1	Environmental Management Plan (EMP): Goal and purpose- Importance of EMP- Content of an EMP	CO4	2
4.2	Role of environmental monitoring program	CO4	1
4.3	Environment Audit: need for audit- audit types and benefits- environmental audit procedure	CO5	2
4.4	ISO 14001 standards: Importance, salient features - Stages in implementation- Benefits	CO5	2
5	Module V: Total Lecture Hours- 7		
5.1	EIA case studies (Indian)- a highway project	CO1, CO4	2
5.2	Hydro electric power plant, air port project	CO1, CO4	3
5.3	Quarry mining project, solid waste management project	CO1, CO4	3

Model Question Paper

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION

Course Code: CET362

Course Name: ENVIRONMENTAL IMPACT ASSESSMENT

Max. Marks: 100

Duration: 3 Hours

Part A

(Answer all questions; each question carries 3 marks)

1. Explain the need for EIA
2. Why environmental (protection) act, 1986 is called an umbrella act?
3. Discuss screening of projects
4. What is rapid EIA?
5. What is ad hoc method for impact assessment?
6. How to predict the impact of a proposed food industry on the water quality of a nearby river
7. Explain the benefits of an environmental audit
8. What is ISO 14001 standard?
9. What are the impacts of a highway project on local air quality
10. Discuss the environment monitoring program for a quarry mining industry.

PART B

(Answer one full question from each module, each question carries 14 marks)

11. (a) Discuss environmental standards for water, air and noise (6 Marks)
(b) Discuss evolution of EIA in India (8 Marks)

OR

12. (a) Discuss Air (Prevention & Control of Pollution) Act 1981 (5 Marks)
(b) Explain salient features of EIA notification 2006 (9 Marks)

13. (a) Discuss environmental clearance process in India (10 Marks)
(b) What is Form-1 ? (4 Marks)

OR

14. (a) What is Initial Environmental Examination? (5 Marks)
(b) Explain different types of EIA (9 Marks)

15. (a) Discuss in detail EIA methodologies (10 Marks)
(b) How can air quality modelling help in assessing the impact on air (4 Marks)

OR

16. (a) Explain the steps to assess the impacts on the ecological environment due to a project (7Marks)
(b) Explain the steps involved in assessment of impacts on the water environment. (7 Marks)

17. (a) What are the different types of Environmental Audit? (5 Marks)
(b) Discuss the content of an environment management plan (9 marks)

OR

18. (a) Discuss the salient features of an Environmental Monitoring Plan (5 Marks)
(b) Explain in detail the procedure for conducting an environmental audit (9 Marks)

19. Explain environmental clearance procedure for an airport (14 Marks)

OR

20. Discuss how to assess the impacts of a hydro electric project (14 Marks)

CET415	ENVIRONMENTAL IMPACT ASSESSMENT	CATEGORY	L	T	P	CREDIT	YEAR OF INTRODUCTION
		OEC	2	1	0	3	2019

Preamble : This course introduces the methodologies for identifying, predicting, evaluating and mitigating the impacts on environment due to any developmental project or activities. Students will learn how to prepare an impact assessment report and devise an environment management plan. Sufficient background will be provided on the environmental clearance procedures in India.

Prerequisite: NIL

Course Outcomes: After the completion of the course the student will be able to

Course Outcome	Description of Course Outcome	Prescribed learning level
CO1	Explain the need for minimizing the environmental impacts of developmental activities	Understand
CO2	Outline environmental legislation & clearance procedure in the country	Remember, Understand
CO 3	Apply various methodologies for assessing the environmental impacts of any developmental activity	Apply & Analyse
CO 4	Prepare an environmental impact assessment report	Analy & Evaluate
CO 5	Conduct an environmental audit	Analyse & Evaluate

Mapping of course outcomes with program outcomes (Minimum requirement)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	-	-	-	-	-	2	2	-	-	-	-	-
CO 2	-	-	-	-	-	2	-	-	-	-	-	-
CO 3	2	-	-	3	2	-	3	-	-	-	-	-
CO4	-	-	-	2	-	2	2	3	-	3	-	-
CO5	-	-	-	2	1	-	2	2	-	2	-	-

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination
	1	2	
Remember	10	10	15
Understand	10	10	15
Apply	15	15	35
Analyse	15	15	35
Evaluate			
Create			

Mark distribution

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 10 marks
Continuous Assessment Test (2 numbers)	: 25 marks
Assignment/Quiz/Course project	: 15 marks

End Semester Examination Pattern:

There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question carries 14 marks and can have maximum 2 sub-divisions.

Course Level Assessment Questions

CO1: Explain the need for minimizing the environmental impacts of developmental activities

- 1.Explain the evolution of EIA in India
- 2.Explain why EIA is needed for developmental projects.

3. What are the different ways in which development projects impact the water quality and quantity?

CO 2: Outline the environmental legislation & clearance procedure in the country

1. Two municipalities in Kerala plan to set up a Common Municipal Solid Waste Management Facility (CMSWMF). Explain the procedure required for the Environmental Clearance (EC) for the project as per the EIA Notification of 2006.(All CMSWMFs are category B projects)

2. Describe the procedure for obtaining environmental clearance according to EIA notification 2006.

3. The Environment (Protection) Act, 1986 is called an umbrella legislation. Substantiate the statement.

CO3: Apply various methodologies for assessing the environmental impacts of any developmental activity

1. Prepare a simple checklist for assessment of socio economic impact due to the development of a highway.

2. Explain overlay mapping as an EIA method

3. Explain how to predict the impact of a highway project on air quality

CO4: Prepare an environmental impact assessment report

1.Explain the Terms of Reference (ToR) for EIA report of a highway project

2.Explain the structure of EIA report

3.Explain the importance of an environmental management plan.

CO5: Conduct an environmental audit

1. Explain the need for environmental auditing

2.What are the different types of environmental audits?

3. Explain the importance of ISO 14001 standard.

Syllabus

Module 1

Definition, Need for EIA, Evolution of EIA: Global & Indian scenario -Environmental legislations in India- The Water (Prevention & Control of Pollution) Act 1974, The Air (Prevention & Control of Pollution) Act 1981, The Environmental (Protection) Act 1986- Environmental standards for water, air and noise quality- EIA Notification 2006

Module 2

Environmental clearance process in India: Screening, Scoping, Public Consultation, Appraisal- Form1-Category of projects- Generic structure of EIA report- Terms of Reference (ToR) -Types of EIA: strategic, regional, sectoral, project level- Rapid EIA and Comprehensive EIA- Initial Environmental Examination (IEE)

Module 3

EIA methodologies: Ad hoc, checklist, matrix, network and overlay- Impact Prediction, Evaluation and Mitigation-Prediction and assessment of the impact on water (surface water and groundwater), air, and noise environment- assessment of ecological impacts and Socio economic Impacts.

Module 4

Environmental Management Plan (EMP): Goal and purpose- Importance of EMP- Content of an EMP- Role of environmental monitoring program
Environment Audit: need for audit- audit types and benefits- environmental audit procedure
ISO 14001 standards: Importance, salient features - Stages in implementation- Benefits

Module 5

EIA case studies (Indian)- a highway project, a hydro electric power plant, an air port project, a quarry mining project and a solid waste management project

Text Books:

1. Larry W Canter, "Environmental Impact Assessment", McGraw Hill Inc. , New York, 1995
2. Betty Bowers Marriott, Environmental Impact Assessment: A Practical Guide, McGraw-Hill Professional, 1997
3. Environmental Impact Assessment, 2003, Y.Anjaneyulu, B.S Publications

References:

1. Lawrence, David P., Environmental Impact Assessment (Practical Solutions to Recurrent Problems), Wiley International, New Jersey.
2. Ministry of Environment & Forests, Govt. of India 2006 EIA Notification
3. Jain, R.K., Urban, L.V. and Stacey, G.S., Environment Impact Analysis, Von Nostrand Reinhold Company.

Course Contents and Lecture Schedule

Module	Topic	Course Outcomes addressed	No. of Lectures
1	Module 1: Total Lecture Hours -7		
1.1	Definition, Need for EIA, Evolution of EIA: Global & Indian scenario	CO1	1
1.2	Environmental legislations in India- The Water (Prevention & Control of Pollution) Act 1974, The Air (Prevention & Control of Pollution) Act 1981, The Environmental (Protection) Act 1986	CO2	3
1.3	Environmental standards for water, air and noise quality	CO2	1
1.4	EIA Notification 2006	CO2	2
2	Module II: Total Lecture Hours- 7		
2.1	Environmental clearance process in India: Screening, Scoping, Public Consultation, Appraisal- Form1-Category of projects	CO2	3
2.2	Generic structure of EIA report- Terms of Reference (ToR)	CO4	1
2.3	Types of EIA: strategic, regional, sectoral, project level-	CO3	1
2.4	Rapid EIA and Comprehensive EIA	CO3	1
2.5	Initial Environmental Examination (IEE)	CO3	1
3	Module III: Total Lecture Hours-7		
3.1	EIA methodologies: Ad hoc, checklist, matrix, network and overlay	CO3	3
3.2	Impact Prediction, Evaluation and Mitigation- Prediction and assessment of the impact on water (surface water and groundwater), air, and noise	CO3	2

	environment		
3.3	assessment of ecological impacts and Socio economic Impacts	CO3	2
4	Module IV: Total Lecture Hours- 7		
4.1	Environmental Management Plan (EMP): Goal and purpose- Importance of EMP- Content of an EMP	CO4	2
4.2	Role of environmental monitoring program	CO4	1
4.3	Environment Audit: need for audit- audit types and benefits- environmental audit procedure	CO5	2
4.4	ISO 14001 standards: Importance, salient features - Stages in implementation- Benefits	CO5	2
5	Module V: Total Lecture Hours- 7		
5.1	EIA case studies (Indian)- a highway project	CO1, CO4	2
5.2	Hydro electric power plant, air port project	CO1, CO4	3
5.3	Quarry mining project, solid waste management project	CO1, CO4	3

Model Question Paper

Reg No.:-----

Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION

Course Code: CET415

Course Name: ENVIRONMENTAL IMPACT ASSESSMENT

Max. Marks: 100

Duration: 3

Hours

Part A

(Answer all questions; each question carries 3 marks)

1. Explain the need for EIA
2. Why environmental (protection) act, 1986 is called an umbrella act?
3. Discuss screening of projects
4. What is rapid EIA?
5. What is ad hoc method for impact assessment?
6. How to predict the impact of a proposed food industry on the water quality of a nearby river
7. Explain the benefits of an environmental audit
8. What is ISO 14001 standard?
9. What are the impacts of a highway project on local air quality
10. Discuss the environment monitoring program for a quarry mining industry.

PART B

(Answer one full question from each module, each question carries 14 marks)

Module 1

11. (a) Discuss environmental standards for water, air and noise (6 Marks)
- (b) Discuss evolution of EIA in India (8 Marks)

OR

12. (a) Discuss Air (Prevention & Control of Pollution) Act 1981 (5 Marks)
- (b) Explain salient features of EIA notification 2006 (9 Marks)

Module 2

13. (a) Discuss environmental clearance process in India (10 Marks)
- (b) What is Form-1 ? (4 Marks)

OR

14. (a) What is Initial Environmental Examination? (5 Marks)
(b) Explain different types of EIA (9 Marks)

Module 3

15. (a) Discuss in detail EIA methodologies (10 Marks)
(b) How can air quality modelling help in assessing the impact on air (4 Marks)

OR

16. (a) Explain the steps to assess the impacts on the ecological environment due to a project (7 Marks)
(b) Explain the steps involved in assessment of impacts on the water environment.

Module 4

17. (a) What are the different types of Environmental Audit? (5 Marks)
(b) Discuss the content of an environment management plan (9 marks)

OR

18. (a) Discuss the salient features of an Environmental Monitoring Plan (5 Marks)
(b) Explain in detail the procedure for conducting an environmental audit (9 Marks)

Module 5

19. Explain environmental clearance procedure for an airport (14 Marks)

OR

20. Discuss how to assess the impacts of a hydro electric project (14 Marks)

CET425	APPLIED EARTH SYSTEMS	CATEGORY	L	T	P	CREDIT	YEAR OF INTRODUCTION
		OEC	2	1	0	3	2019

Preamble: Objective of the course is to appreciate the concept of earth system and its interrelated components, the processes and mechanisms thereof.

Prerequisite: Nil

Course Outcomes:

CO 1	Explain the concept of earth as a system of interrelated components and associated exogenic/endogenic processes.
CO 2	Appraise geological agents and their respective erosion, transportation and deposition regimes and landforms formed.
CO 3	Contemplate constraints and processes that continuously affect earth's surface and its stability and consistency.
CO 4	Evaluate/investigate the significance of Plate tectonics theory to explain the geodynamic features and processes of earth's surface.
CO 5	Develop an understanding of oceanographic and atmospheric regimes and their sway on other subsystems and process thereof.
CO 6	Understand implications of human interaction with the Earth system.

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	3	2		2		3	3	2				3		
CO 2	3	3		3		3	3		1			3		
CO 3	3	3		3		3	3	2	1		3	3		
CO 4	3	3		3		3	3					3		
CO 5	3	3	2	3		3	3					3		
CO 6	2	3		2		3	3	3				3		

Assessment Pattern

Bloom's Category	Continuous Assessment		End Semester Examination (marks)
	Test 1 Marks	Test 2 Marks	
Remember	3	3	10
Understand	4	4	15
Apply	-	-	-
Analyse	9	9	37
Evaluate	9	9	38
Create			

Mark Distribution

Total Marks	CIE (Marks)	ESE (Marks)	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 10 marks
Continuous Assessment Test (2 numbers)	: 25 marks
Assignment/Quiz/Course Project	: 15 marks

End Semester Examination Pattern:

The question consists of two parts- Part A and Part B. Part A consists of 10 questions with 3 marks for each (two questions from each module). Part B consists of two questions from each module, out of which one has to be answered. Each question carries 14 marks and can have maximum 2 subdivisions.

Sample Course Level Assessment Questions:

1 Course Outcome 1 (CO1):

Explain, citing examples the subsystems of earth interact with each other.

2 Course Outcome 2 (CO2):

Appraise the processes involved in any erosional or depositional feature of rivers.

3 Course Outcome 3 (CO3):

Discuss the controls that give rise to mass movements.

4 Course Outcome 4 (CO4):

Analyse the distribution of seismicity and volcanism with respect to plate dynamics.

5 Course Outcome 5 (CO5):

Examine ecological significance of coral reefs and implications of global warming on them.

6 Course Outcome 6 (CO6):

Assess the effect of human activities enhance the vulnerability of environment.

Syllabus

Module	Contents	Hours
I	Fundamental concepts of equilibrium. Geomorphic agents and processes. Basic concept of Earth as a system and its component sub systems. Climate Change vis-a-vis the interrelationships of the subsystems	5
II	Weathering- relevance, influence of and on earth systems, types and controlling factors Fluvial processes-hydrological cycle, fluvial erosion, transportation and deposition, fluvial landforms. Stages of stream development; Drainage patterns.	6
III	Soil- formation and controls, soil profile, soil erosion and conservation methods. Deserts-distribution and controls.	7
IV	Wagner's ideas of continental drift, Plate Tectonics- seafloor spreading. Plate boundaries and their features, mechanisms of plate movements.	6
V	Basics of oceanography: coastal upwelling and downwelling. Outlines of ocean floor topography, Brief account of marine sediments, turbidity currents, basic outlines of origin and circulation of deep-sea surface currents (Atlantic and Pacific Oceans), coral reefs- types and concepts about their formation. Basics of atmosphere and atmospheric processes: Structure and composition of the atmosphere. Heat budget, factors affecting solar radiation. Green House Effect and Global warming, basic ideas about their causes and effects	12 (6+6)

Text/Reference Books

1. Critchfield H. General Climatology Prentice Hall, New Delhi, 1983
2. Fetter C. Applied Hydrogeology CBS New Delhi, 1990
3. Carlson, DH, Plummer, CC and McGreary, D Physical geology: Earth Revealed McGraw Hill New York, 2006
4. Pinet PR Oceanography – An Introduction to the Planet Oceanus, West Publishing Co, 1992
5. Ritter, DF, Kochel, RC and Miller, JR. Process Geomorphology Wm.C. Brown Publishers New York, 1995
6. Soman K Geology of Kerala Geological Society of India, Bangalore, 2001

Course Content and lecture Schedule:

No.	Topic	Course Outcome	Hours
Module I			
1.1	Basic concept of Earth as a system, interactions between its component sub systems.	CO1, CO5, CO6	1
1.2	Fundamental concepts of equilibrium	CO1, CO3	2
1.3	Geomorphic agents and processes	CO1, CO2, CO3	2
Module II			
2.1	Weathering- relevance, influence of and on earth systems Types and controlling factors	CO1, CO2, CO3	2
2.2	River as a system, Fluvial processes-hydrological cycle, fluvial erosion, transportation and deposition and landforms	CO1, CO2, CO3	2
2.3	Stages of stream development	CO1, CO2, CO3	1
2.4	Drainage patterns and implications	CO1, CO2, CO3, CO4	1
Module III			
3.1	Soil- significance and controls, soil profile	CO1, CO2, CO3, CO6	2
3.2	Soil erosion and conservation methods	CO1, CO2, CO3, CO6	3
3.3	Deserts-distribution and controls	CO2, CO3	2
Module IV			
4.1	Wagner's ideas of continental drift, limitations	CO2, CO3, CO4	2
4.2	Plate Tectonics- background of the theory, evidences	CO2, CO3, CO4	1
4.3	Plate boundaries and their features, seismicity and volcanism	CO2, CO3, CO4	2
4.4	vis-à-vis plates Mechanisms of plate movements	CO2, CO3, CO4	1
Module V			
5.1	Importance of marine environment	CO1, CO2, CO3	1
5.2	Circulation in oceans- surface circulation in deep sea (Atlantic and Pacific Oceans), coastal upwelling and downwelling	CO1, CO2, CO3	2
5.3	Outlines of ocean floor topography, brief account of marine sediments	CO1, CO2, CO3	2
5.4	Turbidity currents	CO1, CO2, CO3	1
5.5	Coral reefs- types and concepts about their formation.	CO1, CO2, CO3	2
5.6	Structure and composition of the atmosphere	CO1, CO2, CO3, CO6	2
5.7	Heat budget, radiation balance of earth, Green House Effect and Global warming, basic ideas about their causes and effects	CO1, CO2, CO3, CO6	2

Model Question Paper

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION
Course Code: CET425
APPLIED EARTH SYSTEMS**

Marks:100

Duration: 3 hours

PART A

(Answer all questions. Each question carries three marks)

1. Natural slopes are in dynamic equilibrium. Appraise.
2. Assess the significance of different soil horizons.
3. Examine the conditions that give rise to parallel drainage pattern.
4. Describe features associated with convergent plate boundaries.
5. Assess the fossil evidences that support the idea of continental drift.
6. Compare creep and solifluction.
7. Assess the conditions of coral bleaching.
8. Appraise the increasing temperature with elevation in stratosphere.
9. Evaluate the role of latitudinal distribution in the formation of Hadley cells.
10. Explain the role of ocean currents in the formation of deserts.

PART B

(Answer one full question from each module)

MODULE 1

11. There are mass and energy interactions between the subsystems of earth. Justify with two examples. (14)

OR

12. Assess the feedback mechanisms involved in controlling the mean sea-level. (14)

MODULE 2

13. Evaluate the controls (any four) on chemical weathering. (14)

OR

14. Examine the processes of fluvial erosion and transportation. (14)

MODULE 3

15. Evaluate the factors giving rise to aridity. (14)

OR

16. Discuss the influence of climate, slope and rock structure on occurrence on soil genesis. (14)

MODULE 4

17. a) Examine any two evidences put forth by Wagner that support continental drift. (8)

b) Relate convection currents in mantle to plate movements. (6)

OR

18. Appraise the significance of plate boundaries on seismicity and volcanism. (14)

MODULE 5

19. a) Explain the implications of ozone, water vapour and carbon dioxide in troposphere. (7)

b) How are turbidity currents formed? (7)

OR

20. a) Examine the heat budget of earth. (7)

b) Assess the significance of zooxanthellae in the maintenance of coral reefs. (7)

CET445	NATURAL DISASTERS AND MITIGATION	CATEGORY	L	T	P	CREDIT	YEAR OF INTRODUCTION
		OEC	2	1	0	3	2019

Preamble : Objective of the course is to introduce the concept of disasters, their causes and their mitigation and management.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to

CO 1	Explain interaction between subsystems of earth that give rise to hazards and their potential for disasters
CO 2	Explain the evolving concepts and thoughts of management of hazards and disasters
CO 3	Analyse the causes behind natural disasters and evaluate their magnitude and impacts
CO 4	Create management plans for hazards and disasters, and understand the roles of agencies involved.
CO 5	Explain the concept of sustainable development and EIA and their role in mitigating disasters

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	2	1	-	2	1	2	3	1	-	1	1	3
CO 2	2	1	-	2	1	2	3	1	-	1	1	3
CO 3	1	2	2	3	3	3	2	2	2	2	1	3
CO 4	2	1	3	2	3	2	3	2	2	1	3	3
CO 5	2	2	3	2	1	3	3	2	1	2	2	3

Assessment Pattern

Bloom's Category	Continuous Assessment		End Semester Examination (marks)
	Test 1 Marks	Test 2 Marks	
Remember	5	5	20
Understand	5	5	20
Apply	-	-	-
Analyse	5.5	5.5	22
Evaluate	5.5	5.5	22
Create	4	4	16

Mark Distribution

Total Marks	CIE (Marks)	ESE (Marks)	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 10 marks
Continuous Assessment Test (2 numbers)	: 25 marks
Assignment/Quiz/Course Project	: 15 marks

End Semester Examination Pattern:

The question consists of two parts- Part A and Part B. Part A consists of 10 questions with 3marks for each (two questions from each module). Part B consists of two questions from each module, out of which one has to be answered. Each question carries 14 marks and can have maximum 2 subdivisions.

Sample Course Level Assessment Questions:

Course Outcome 1:

Citing a few examples known to you, discuss how disaster differs from a hazard.

Course Outcome 2 :

Compare a few earthquakes in history based on their magnitude and degree of damage.

Course Outcome 3:

Discuss how the potentiality for volcanic eruption may be assessed.

Course Outcome 4:

Based on any disaster in an infrastructure project, prepare a report on how following EIA rules could have abated the disaster.

Course Outcome 5:

Prepare a disaster management plan in case of a landslide on a Railway track near to a station.

Syllabus

Module	Contents	Hours
1	Hazards and disasters: Introduction to key concepts and terminology: hazard, disasters and types of classifications, vulnerability, exposure, risk, crisis, emergency, capacity, resilience, Carbon footprint. Effect of subsystems of earth. Urbanisation, hazards and disasters.	3
2	Extent and nature of natural hazards, implications of climate change: Earth quakes, Volcanoes, Floods. Coastal disasters- Storm surges, Tsunamis, mitigation methods.	8
3	Landslides, Soil and soil degradation, erosion and Desertification, Forest fires, their mitigation methods.	7
4	Impacts and assessment: Risk Management and Assessment and Disaster Management cycle. SWOT Analysis- basic concepts, uses, limitations and advantages. Disaster management plan and reports, participation of community in disaster management.	8
5	Hazard and disaster management plans for floods, storm surges, landslides, earthquakes, forest fires: pre-disaster phase, actual disaster phase, post-disaster phase- Relief and Amenities, Relief camps, organization, individual and community participation, camp layout, food requirement, water needs, sanitation, security, information administration. Concepts of EIA and sustainable development. Technology in disaster management.	9

Text Books

1. Ariyabandu, M. and Sahni P. "Disaster Risk Reduction in South Asia", Prentice-Hall (India), 2003.
2. Valdiya, K.S. "Environmental Geology - Ecology, Resource and Hazard Management". McGraw-Hill Education (India) Private Limited. 2013
3. Shaw, R and Krishnamurthy, RR (Ed.) "Disaster Management: Global Problems and Local Solutions". Universities Press (India) Ltd. 2009
4. Gupta, H.K. (Ed.), "Disaster management". Universities Press (India) Ltd. 20038.
5. Jha, M.K. (Ed.) "Natural and Anthropogenic Disasters- Vulnerability, Preparedness and Mitigation". Springer, Amsterdam. 2010
6. Nick Carter. W., "Disaster Management - A Disaster Manager's Handbook". Asian Development Bank, Philippines. 1991
7. U.N.O, "Mitigating Natural Disasters, Phenomena, Effects and options, A Manual for policy makers and planners", United Nations. New York, 1991

References

1. Andrew, S., "Environmental Modeling with GIS and Remote Sensing", John Willey, 2002
2. Bell, F.G., "Geological Hazards: Their assessment, avoidance and mitigation", E & FN SPON Routledge, London. 1999
3. Bossler, J.D., "Manual of Geospatial Science and Technology", Taylor and Francis, 2001
4. Alexander, D., "Natural Disasters", Research Press, New Delhi, 1993
5. Girard, J. "Principles of Environmental Chemistry". Jones & Bartlett Publishers, New York. 2013
6. Khorram-Manesh, A. (Ed.). "Handbook of Disaster and Emergency Management". Kompendiet (Gothenburg). 2017
7. Mason, I., McGuire, B., and Kilburn, C., "Natural Hazards and Environmental Change (Key Issues in Environmental Change)". Routledge, London. 2002

Model Question Paper

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B. TECH DEGREE EXAMINATION**

Course Code: CET445

Course Name: NATURAL DISASTERS & MITIGATION

Marks:100

Duration: 3 hours

PART A

(Answer all questions. Each question carries three marks)

1. With a typical example explain how a hazard differs from a disaster
2. Explain the terms: vulnerability and risk and how they contribute to disasters
3. Enumerate natural disasters, and mention their impacts.
4. How are earthquakes caused? What is the connection between earthquake and tsunami?
5. How is soil formed? Why do soils differ in characteristics?
6. Compare creep and solifluction.
7. What is meant by a pre-disaster plan? Give an example.
8. How is environmental impact connected to disasters?
9. Evaluate the pre-disaster measures for landslides.
10. Compare risk and vulnerability assessment.

PART B

(Answer one full question from each module)

11. a) Describe how an infrastructure project could trigger disaster. (6)

b) How does resilience influence the recovery from a disaster? Illustrate with examples. (8)

OR

12. Bring out the differences between emergency and disaster. How is the risk for a disaster assessed? (14)

13. What are the causes of floods? How do they decide the magnitude of impact? (14)

OR

14. Discuss the triggering factors for landslides. Illustrate how they could become disastrous in the case of an infrastructure project. (14)

15. Evaluate the factors giving rise to forest fires. Analyse the influence of climate change on them. (14)

OR

16. How does desertification occur? Discuss the mitigation measures. (14)

17. Compare and contrast the concepts of disaster response and recovery with suitable examples. (14)

OR

18. Appraise (with suitable examples) the significance of ideas of relief, rehabilitation, reconstruction and recovery in disaster management. (14)

19. Prepare a disaster management plan for a landslide scenario in a hilly terrain. Discuss the organisational set up needed for the same. (14)

OR

20. Discuss the various factor to be considered in conducting environmental impact assessment of a highway project, keeping in mind the probable hazards/disasters. (14)

Course Contents and Lecture Schedule

No.	Topic	Course Outcome	No. of Hrs
1	Module 1		Total: 3
1.1	Introduction, Hazard, disaster, their characteristics and effects, interaction between subsystems of earth that bring about hazards and their intensification. Classification, how development is connected to disasters. Disaster cycle	CO1, CO2	2
1.2	Hazard and disaster Terminology: vulnerability and types, exposure, risk, capacity, crisis, emergencies, resilience etc. basic concepts of carbon footprint	CO1, CO4	1
2	Module 2		Total: 8
2.1	Natural Disasters: General classification, Causes, types, impact of: Earth quakes, volcanoes, floods, storm surges, tsunamis	CO1, CO2, CO3	3
2.2	Assessment and mitigation of: Floods, types Coastal disasters: Earth quakes, volcanoes, floods, storm surges, tsunamis.	CO1, CO2, CO3	5
3	Module 3		Total: 7
3.1	Soil, formation, significance and characteristics. Soil degradation, engineering and agricultural methods of prevention	CO1, CO3, CO4	2
3.2	Desertification: nature and mechanisms, mitigation	CO2, CO3, CO4	1
3.3	Landslides: processes, controlling factors, classification and impact and alleviation	CO2, CO3, CO4	2
3.4	Forest fires: incidence and means and deterrence	CO1, CO3, CO4	2
4	Module 4		Total: 8
4.1	Steps in Risk Management and Assessment, Disaster management cycle-Prevention, Preparedness, Response, and Recovery	CO1, CO3, CO4	3
4.2	SWOT Analysis- concepts, uses, limitations and advantages	CO2, CO3, CO4	3
4.3	Disaster management plan and reports, participation of community in disaster management	CO3, CO4, CO5	2
5	Module 5		Total: 9
5.1	Hazard and Disaster Management: relief camps, organisation and amenities. Behavioral aspects of management- psychological considerations, training in human professionalism, individual and community empowerment	CO1, CO2, CO4	2

5.2	Management of floods, storm surges, landslides, earthquakes, forest fires: pre-disaster phase, actual disaster phase, post-disaster phase. Relief and Amenities, Relief camps, organization, camp layout, food requirement, water needs, sanitation, security.	CO3, CO4, CO5	5
5.3	Concepts of EIA and sustainable development.	CO5	2

CET468	CLIMATE CHANGE AND SUSTAINABILITY	CATEGORY	L	T	P	CREDIT	YEAR OF INTRODUCTION
		PEC	3	0	0	3	2019

Preamble: Goal of this course is to expose the students to the fundamental concepts of climate, its influencing factors, climate change and its relationship with sustainability. After this course, students will be able to recognize the real-world problems that can happen due to climate change, aware of the various mitigation and adaptation techniques using sustainable technologies for combating the adverse impacts due to climate change and respond accordingly.

Prerequisite: Nil

Course Outcomes: After completion of the course the student will be able to:

CO 1	Explain the fundamental concepts of climate and its influencing factors
CO 2	Explain the factors affecting climate change and the harmful impacts due to climate change
CO 3	Discuss the problems due to urbanization and the need for sustainable development
CO 4	Demonstrate the various adaptation and mitigation techniques for combating climate change
CO 5	Discuss multilateral agreements on climate change, Case studies on Climate change

Mapping of course outcomes with program outcomes (Minimum requirement)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	-	-	-	-	-	-	-	-	-	-	-
CO 2	-	2	-	2	-	-	2	-	-	-	-	-
CO 3	-	3	-	3	-	-	2	-	-	-	-	-
CO 4	2	-	-	-	-	-	3	-	-	-	-	-
CO 5	-	-	-	-	-	-	2	-	-	-	-	-

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination (Marks)
	Test 1 (Marks)	Test 2 (Marks)	
Remember	20	20	40
Understand	20	20	40
Apply	10	10	20
Analyze			
Evaluate			
Create			

Mark Distribution

Total Marks	CIE Marks	ESE Marks	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation (CIE)Pattern :

Attendance	: 10 Marks
Continuous Assessment Test (2 numbers)	: 25 Marks
Assignment/Quiz/Course project	: 15 Marks

End Semester Examination (ESE)Pattern : There will be two parts; Part A and Part B. Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Course Level Assessment Questions

(Questions may be framed based on the outline given under each course outcome)

CO1: Explain the fundamental concepts of climate and its influencing factors

1. What is atmospheric stability?
2. Explain in detail the factors influencing climate.
3. Discuss how inversions are formed.

CO2: Explain the factors affecting climate change and the harmful impacts due to climate change

1. Explain vulnerability index.
2. Discuss the impact of climate change on agriculture.
3. What are the anthropogenic drivers of climate change?

CO3: Discuss the problems due to urbanization and the need for sustainable development

1. Explain urban heat islands.
2. What are the causes for urban floods?
3. Discuss how life cycle analysis helps in sustainable development.

CO4: Demonstrate the various adaptation and mitigation techniques for combating climate change

1. How green engineering can help in combating climate change?
2. Explain circular economy
3. Discuss nature based solutions in disaster management.

CO5: Discuss multilateral agreements on climate change, Case studies on Climate change

1. What is Clean Development Mechanism?
2. How emission trading helps fighting climate change?
3. Explain Kyoto mechanisms to reduce GHG emissions.

Syllabus

Module 1

Climate

Climate and weather, Meteorology and climatology, Composition and structure of atmosphere. Factors influencing climate-Insolation, Temperature, Humidity, Pressure, Wind, Precipitation, Topography. Atmospheric stability, Lapse rate, Inversions, Types of inversions. Cyclones and Anticyclones.

Module 2

Climate change

Climate change, anthropogenic drivers of climate change, Global warming, Green house effect, Air pollution, carbon foot print, Impact of climate change on water cycle, agriculture, forest, water resources, urban areas, biodiversity, human health. Carbon sequestration , vulnerability index.

Module 3

Urbanisation and Sustainable development

Urbanisation and Industrialization, Urbanisation, problems of urbanisation, Urban sprawl, Urban heat islands, causes, mitigation measures. Urban flooding, water conservation and ecological aspects. Urban Planning, Zoning of Land Use

Pillars of Sustainable development, Sustainability indicators, Life cycle analysis, Material flow analysis, Green energy, Waste management, 3R concepts, Sustainable cities, Sustainable Urbanisation

Module 4

Adaptation and mitigation strategies

Green Engineering, Design for Engineering, Green technologies, Circular economy. Planning of cities as climate resilient, Climate change and infrastructure planning, Climate resilient infrastructure, nature based solutions in disaster management, adaptation strategies for combating climate change

Module 5

Climate and sustainability

Sustainability Engineering , Kyoto mechanisms to reduce GHG emission- Clean Development Mechanism, Joint Implementation, Emission trading, Case studies on Kyoto mechanism, Case studies on climate change and climate change risk reduction.

Text/Reference Books

- Lal, DS, “Climatology”, Published by Sharda Pustak Bhawan, ISBN8186204121
- John T. Hardy, Jean Ponce, “Climate Change - Causes, Effects, and Solutions”, Wiley Publications, 2003
- Jonathan Tomkin, Tom Theis, "Sustainability - A Comprehensive Foundation", 12th Media Services, 2018
- Karthik Karuppu, "Green Building Guidance: The Ultimate Guide for IGBC Accredited Professional Examination Book", NVICO Notion Press, 2019
- Keith D. Alverson, ZintaZommers, "Resilience : The science of adaptation to climate change", Elsevier, 2018
- Leal Filho, W., Azul, A.M., Brandli, L., Özuyar, P.G., Wall, T. (Eds.), “Sustainable Cities and Communities” Springer
- Intergovernmental Panel on Climate Change (IPCC) reports

Course contents and Lecture schedule

Module	Topic	Course Outcomes addressed	No. of Lectures
1	Module 1: Total Lecture Hours -7		
1.1	Climate and weather, Meteorology and climatology, Composition and structure of atmosphere.	CO1	1
1.2	Factors influencing climate-Insolation, Temperature, Humidity, Pressure, Wind, Precipitation, Topography.	CO1	2
1.3	Atmospheric stability, Lapse rate, Inversions, Types of inversions.	CO1	3
1.4	Cyclones and Anticyclones.	CO1	1
2	Module II: Total Lecture Hours- 7		
2.1	Climate change, anthropogenic drivers of climate change	CO2	1
2.2	Global warming, Green house effect, Air pollution, carbon foot print,	CO2	2
2.3	Impact of climate change on water cycle, agriculture, forest, water resources, urban areas, biodiversity, human health.	CO2	3
2.4	Carbon sequestration , vulnerability index.	CO2	2
3	Module III: Total Lecture Hours-7		
3.1	Urbanisation and Industrialization, Urbanisation, problems of urbanisation, Urban sprawl, Urban heat islands, causes, mitigation measures.	CO3	2
3.2	Urban flooding, water conservation and ecological aspects.Urban Planning, Zoning of Land Use	CO3	1
3.3	Pillars of Sustainable development, Sustainability indicators,	CO3	1
3.4	Life cycle analysis, Material flow analysis,	CO3	1
3.5	Green energy, Waste management, 3R concepts,	CO3	1
3.6	Sustainable cities, Sustainable Urbanisation	CO3	1
4	Module IV: Total Lecture Hours- 7		

4.1	Green Engineering, Design for Engineering, Green technologies	CO4	2
4.2	Circular economy	CO4	1
4.3	Planning of cities as climate resilient, Climate change and infrastructure planning, Climate resilient infrastructure.	CO4	2
4.4	Nature based solutions in disaster management	CO4	1
4.5	Adaptation strategies for combating climate change	CO4	1
5	Module V: Total Lecture Hours- 7		
5.1	Sustainability Engineering , Kyoto mechanisms to reduce GHG emission, Case studies on Kyoto mechanism.	CO4	3
5.2	Clean Development Mechanism, Joint Implementation, Emission trading	CO3, CO4	2
5.3	Case studies on climate change and climate change risk reduction	CO4	2

Model Question Paper

Reg No.: _____

Name: _____

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
EIGHTH SEMESTER B.TECH DEGREE EXAMINATION**

Course Code: CET 468

Course Name: CLIMATE CHANGE & SUSTAINABILITY

Max. Marks: 100

Duration: 3 Hours

Part A

(Answer all questions; each question carries 3 marks)

1. Explain lapse rate.
2. How climate is different from weather.
3. What is carbon footprint?
4. Explain carbon sequestration.
5. Explain urban sprawl.
6. What is 3R concept in waste management?
7. What is a climate resilient city?
8. How adaptation and mitigation strategies are different?.
9. Explain CDM.
10. What is emission trading?

PART B

(Answer one full question from each module, each question carries 14 marks)

11. (a) Discuss how inversions are formed. What are different types of inversion? (7 Marks)
(b) Describe the composition and structure of atmosphere with a neat sketch .(7 Marks)

OR

12. (a) Explain in detail the factors influencing climate (8 Marks)
(b) Compare cyclones and anticyclones ? (6 Marks)
13. (a) Discuss the impact of climate change on agriculture (8 Marks)

(d) Explain vulnerability index (6 Marks)

OR

14. (a) What are the anthropogenic drivers for climate change? (8 Marks)

(b) Explain Green house effect. How it influence climate? (6 Marks)

15. (a) What is urban heat island? What are the causes? (8 Marks)

(b) Explain life cycle analysis. (6 Marks)

OR

16. (a) Discuss the causes and mitigation measures for urban flood (7 Marks)

(b) Explain the pillars of sustainable development (7 Marks)

17. (a) Explain how green technologies help in combating climate change.
(7Marks)

(b) Discuss nature based solutions in disaster management. (7 marks)

OR

18. (a) Explain how circular economy concepts helps in climate change mitigation (7 Marks)

(b) What are the factors to consider while designing a climate resilient city? (7 Marks)

19. (a) Explain Kyoto mechanisms to reduce GHG emissions (7 Marks)

(b) How emission trading is effective as a climate change reduction strategy? (7 Marks)

OR

20. Elaborate climate change reduction strategies with an example case study (14 Marks)

CET464	AIRQUALITY MANAGEMENT	CATEGORY	L	T	P	CREDIT	YEAR OF INTRODUCTION
		PEC	3	0	0	3	2019

Preamble: The course is designed to provide engineering knowledge on air pollution, air quality monitoring and air pollution control strategies among students. It motivates the students in maintaining and improving the air quality of the environment and empower learners to take appropriate actions to reduce the air pollution for the benefit of the society.

Pre-requisite: Nil

Course outcome :After the course, the student will able to:

CO1	Explain the sources of air pollution and different types of air pollutant.
CO2	Describe the effect of air pollutants on vegetation, animals, materials and human health.
CO3	Discuss the different methods of ambient air quality monitoring system which supports an air quality management program.
CO4	Explain the meteorological aspects of air pollutant dispersion.
CO5	Describe the various air pollution control strategies that can be undertaken to meet the air quality goals.

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					2	2					
CO2	3					2	1					
CO3	3					2	2					
CO4	3					3	2					
CO5	3					2	2					

Assessment pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination (Marks)
	Test 1 (Marks)	Test 2 (Marks)	
Remember	15	15	30
Understand	20	20	40
Apply			
Analyze	10	10	20

Evaluate	5	5	10
Create			

Continuous Internal Evaluation Pattern:

Attendance	:	10 marks
Continuous Assessment Test (2 numbers)	:	25 marks
Assignment/Quiz/Course project	:	15 marks
Total	:	50 marks

End semester examination pattern – There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Course Level Assessment Questions

Qn. No	Question	Marks	Course outcome (CO) Assessed
Part A			
1	What are the criteria air pollutants?	3	CO1
2	Define air pollution.	3	CO1
3	Explain effect of carbon monoxide on human health.	3	CO2
4	What are the sources of indoor air pollution?	3	CO2
5	Enumerate the assumptions in Gaussian plume model.	3	CO3
6	Explain Pasquill's stability curves.	3	CO3
7	Discuss National Ambient Air Quality Standards.	3	CO4
8	Explain the devices used for sampling gases and vapours.	3	CO4
9	Write short notes on scrubbing.	3	CO5
10	List the different methods for controlling the particulate air pollutants.	3	CO5

Part B (Answer ANY ONE FULL question from each module)			
Module I			
11(a)	Explain green house effect.	7	CO1
11(b)	Give a classification of the different types of air pollutants based on different criteria with suitable examples.	7	CO1
12	Explain major air pollution episodes.	14	CO1
Module II			
13(a)	Discuss the effects of indoor air pollutants.	7	CO2
13(b)	Discuss the effects of air pollutants on human health.	7	CO2
14(a)	Describe the effect of air pollution on environment.	9	CO2
14(b)	Write a short note on effect of air pollution on vegetation.	5	CO2
Module III			
15(a)	Explain the effect of meteorological factors on dispersion of air pollutant.	7	CO3
15(b)	Explain temperature lapse rate.	7	CO3
16	Explain advantages and disadvantages of Gaussian plume model.	14	CO3
Module IV			
17(a)	Briefly explain Emission Inventory.	5	CO4
17(b)	Explain the different methods for the collection of gaseous air pollutants.	9	CO4
18	Explain various methods used for the sampling of particulate air pollutants.	14	CO4
Module V			
19 (a)	Write short note on scrubbing.	5	CO5

19 (b)	Explain the working of an Electrostatic precipitator for particulate emission control. Also explain its advantages and disadvantages.	9	CO5
20	Explain various methods used for the control of particulate air pollutants.	14	CO5

Syllabus

Module I

Introduction- Components of Environment- Definition –Air Pollution- History of air pollution episodes- Sources of Air pollution – Industrial Processes causing Air Pollution- Air Pollutants- Types of Air Pollutants- Criteria Pollutants.

Module II

Effect of air pollutants on health, vegetation, animals and materials and environment- Green house effect - Indoor Air Pollution- Sources of indoor air pollutants- Effects of indoor air pollution.

Module III

Meteorological aspects of Air Pollutant Dispersion - Temperature and Pressure relationships- Atmospheric Stability- Temperature Lapse Rate- Inversions- Types, Plume behaviour. Dispersion of Air pollutants-Plume dispersion theory- Gaussian plume model (Derivation not required)- Assumptions- Advantages and Disadvantages- Pasquill's stability curves.

Module IV

Air Quality monitoring - Ambient air sampling - Collection of gaseous air pollutants-Collection of particulate Pollutants- Ambient Air Quality standards- Emission Inventory.

Module V

Control of Air Pollutants- Particulate emission control-methods, Scrubbing-Cyclones- Filtration- Electrostatic Precipitation-Gaseous emission control- adsorption, absorption, thermal methods.

Text Books :

1. C.S.Rao, “Environmental Pollution Control Engineering”, New Age International Pub., 2006
2. M.N. Rao & H.V.N Rao ,Air Pollution, Tata McGraw Hill Co. Ltd, Delhi, 1990.
3. Peavy H S, Rowe, D.R. Tchobanaglou “Environmental Engineering” McGraw Hill Education, 1985

References:

1. Beat Meyer, Indoor Air Quality, Addison – Wesley Publishers.
2. Chhatwal G. R., Encyclopedia of Environmental Pollution and Control, Vol.1, 2 &3, Anmol Publications.
3. Noel de Nevers, Air Pollution Control Engineering, McGraw Hill, New York, 1995.

4. J. R. Mudakavi, Principles and Practices of Air Pollution Control and Analysis, IK International Pvt Ltd, 2012

5. Perkins H.C, “Air Pollution” McGraw Hill Publications, 2004

6. S C Bhatia, Textbook of Air Pollution and Its Control , Atlantic publishers, 2007

7. S P Mahajan, Air Pollution Control, Common Wealth of Learning, Canada,
Indian Institute of Science, Bangalore, 2006

8. Stern.A, “Air Pollution” (Volume I ,II & III) ,Academic Press New York, 1962

Course content and Schedule of Lecture

Module	Topic	Course outcome addressed	No of Hours
Module I (7 Hours)			
1.1	Introduction- Components of Environment	CO1	1
1.2	Definition –Air Pollution	CO1	
1.3	History of air pollution episodes	CO1	1
1.4	Sources of Air pollution	CO1	1
1.5	Industrial Processes causing Air Pollution	CO1	1
1.6	Air Pollutants	CO1	1
1.7	Types of Air Pollutants	CO1	1
1.8	Criteria Pollutants	CO1	1
Module II (7 Hours)			
2.1	Effect of air pollutants on health	CO2	1
2.2	Effect of air pollutants on vegetation and animals	CO2	1
2.3	Effect of air pollutants on materials and environment	CO2	1
2.4	Effect of air pollutants on materials and environment	CO2	1
2.5	Green house effect	CO2	1
2.6	Indoor Air Pollution	CO2	

2.7	Sources of indoor air pollutants	CO2	1
2.8	Effects of indoor air pollution	CO2	1

Module III (7 Hours)			
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3.1	Meteorological aspects of Air Pollutant Dispersion	CO3	1
3.2	Temperature and Pressure relationships	CO3	
3.3	Atmospheric Stability	CO3	1
3.4	Temperature Lapse Rate	CO3	1
3.5	Inversions- Types, Plume behaviour	CO3	1
3.6	Dispersion of Air pollutants -Plume dispersion theory	CO3	1
3.7	Gaussian plume model	CO3	1
3.8	Assumptions-Advantages and Disadvantages	CO3	
3.9	Pasquill's stability curves	CO3	1

Module IV (7 Hours)			
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4.1	Air Quality monitoring	CO4	1
4.2	Ambient air sampling	CO4	1
4.3	Collection of gaseous air pollutants	CO4	1
4.4	Collection of particulate Pollutants	CO4	1
4.5	Collection of particulate Pollutants	CO4	1
4.6	Ambient Air Quality standards	CO4	1
4.7	Emission Inventory	CO4	1

Module V (7 Hours)			
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5.1	Control of Air Pollutants	CO5	1
5.2	Particulate emission control-methods	CO5	1

5.3	Scrubbing-Cyclones	CO5	1
5.4	Filtration- Electrostatic Precipitation	CO5	1
5.5	Gaseous emission control	CO5	1
5.6	Adsorption, absorption, thermal methods.	CO5	1
5.7	Thermal methods.	CO5	1

Model Question Paper

Reg. No.:.....

QP CODE:.....

Name:.....

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, MONTH & YEAR**

**Course Code: CET 464
Air Quality Management**

Max. Marks: 100

Duration: 3 hours

Part A

(Answer all questions; each question carries 3 marks)

1. What are the criteria air pollutants?
2. Define air pollution.
3. Explain effect of carbon monoxide on human health.
4. What are the sources of indoor air pollution?
5. Enumerate the assumptions in Gaussian plume model.
6. Explain Pasquill's stability curves.
7. Discuss National Ambient Air Quality Standards.
8. Explain the devices used for sampling gases and vapours.
9. Write short notes on scrubbing.
10. List the different methods for controlling the particulate air pollutants.

Part B

(Answer one full question from each module; each question carries 14 marks)

Module I

11. a) Explain green house effect. (7 Marks)
b) Give a classification of the different types of air pollutants based on different criteria with suitable examples. (7 Marks)

OR

12. Explain major air pollution episodes. (14 Marks)

Module II

13. (a) Discuss the effects of indoor air pollutants. (7 Marks)
(b) Discuss the effects of air pollutants on human health. (7 Marks)

OR

14. (a) Describe the effect of air pollution on environment. (9 Marks)
(b) Write a short note on effect of air pollution on vegetation. (5 Marks)

Module III

15. (a) Explain the effect of meteorological factors on dispersion of air pollutant. (7 Marks)
(b) Explain temperature lapse rate. (7 Marks)

OR

16. Explain advantages and disadvantages of Gaussian plume model. (14 Marks)

Module IV

17. (a) Briefly explain Emission Inventory. (5 Marks)
(b) Explain the different methods for the collection of gaseous air pollutants. (9 Marks)

OR

18. Explain various methods used for the sampling of particulate air pollutants. (14 Marks)

Module V

19. (a) Write short note on scrubbing. (5 Marks)
(b) Explain the working of an Electrostatic precipitator for particulate emission control. Also explain its advantages and disadvantages. (9 Marks)

OR

20. Explain various methods used for the control of particulate air pollutants. (14 Marks)



SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

Vidya Nagar, Palissery, Karukutty, Kerala 683576

Syllabus of courses

Professional Ethics/Gender Equality/ Human Values

HUN 101	LIFE SKILLS	CATEGORY	L	T	P	CREDIT	YEAR OF INTRODUCTION
		MNC	2	0	2	---	2019

Preamble: Life skills are those competencies that provide the means for an individual to be resourceful and positive while taking on life's vicissitudes. Development of one's personality by being aware of the self, connecting with others, reflecting on the abstract and the concrete, leading and generating change, and staying rooted in time-tested values and principles is being aimed at. This course is designed to enhance the employability and maximize the potential of the students by introducing them to the principles that underly personal and professional success, and help them acquire the skills needed to apply these principles in their lives and careers.

Prerequisite: None

Course Outcomes: After the completion of the course the student will be able to

CO 1	Define and Identify different life skills required in personal and professional life
CO 2	Develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO 3	Explain the basic mechanics of effective communication and demonstrate these through presentations.
CO 4	Take part in group discussions
CO 5	Use appropriate thinking and problem solving techniques to solve new problems
CO 6	Understand the basics of teamwork and leadership

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1						2		1	2	2	1	3
CO 2									3			2
CO 3						1			1	3		
CO 4										3		1
CO 5		3	2	1								
CO 6						1			3			

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	50	50	2 hours

Continuous Internal Evaluation

Total Marks: 50

Attendance	: 10 marks
Regular assessment	: 15 marks
Series test (one test only, should include first three modules)	: 25 marks

Regular assessment

➤ **Group Discussion (Marks: 9)**

Create groups of about 6 students each and engage them on a GD on a suitable topic for about 20 minutes. Parameters to be used for evaluation are as follows:

- Communication Skills : 3 marks
- Subject Clarity : 2 marks
- Group Dynamics : 2 marks
- Behaviours & Mannerisms : 2 marks

➤ **Presentation Skills (Marks: 6)**

Identify a suitable topic and ask the students to prepare a presentation (preferably a power point presentation) for about 10 minutes. Parameters to be used for evaluation are as follows:

- Communication Skills : 2 marks
- Platform Skills : 2 marks
- Subject Clarity/Knowledge : 2 marks

End Semester Examination

Total Marks: 50

Time: 2 hrs.

Part A: Short answer question (25 marks)

There will be one question from each MODULE (five questions in total, five marks each). Each question should be written in about maximum of 400 words. Parameters to be used for evaluation are as follows:

- (i) Content Clarity/Subject Knowledge
- (ii) Presentation style
- (iii) Organization of content

Part B: Case Study (25 marks)

The students will be given a case study with questions at the end. The students have to analyze the case and answer the question at the end. Parameters to be used for evaluation are as follows:

- (i) Analyze the case situation
- (ii) Key players/characters of the case
- (iii) Identification of the problem (both major & minor if exists)
- (iv) Bring out alternatives
- (v) Analyze each alternative against the problem
- (vi) Choose the best alternative
- (vii) Implement as solution
- (viii) Conclusion

(ix) Answer the question at the end of the case

Course Level Assessment Questions

Course Outcome 1 (CO1):

1. List 'life skills' as identified by WHO
2. What do you mean by effective communication?
3. What are the essential life skills required by a professional?

Course Outcome 2 (CO2)

1. Identify an effective means to deal with workplace stress.
2. How can a student apply journaling to stress management?
3. What is the PATH method? Describe a situation where this method can be used effectively.

Course Outcome 3(CO3):

1. Identify the communication network structure that can be observed in the given situations. Describe them.
 - (a) A group discussion on development.
 - (b) An address from the Principal regarding punctuality.
 - (c) A reporter interviewing a movie star.
 - (d) Discussing the answers of a test with a group of friends.
2. Elucidate the importance of non-verbal communication in making a presentation
3. Differentiate between kinesics, proxemics, and chronemics with examples.

Course Outcome 4 (CO4):

1. How can a participant conclude a group discussion effectively?
2. 'Listening skills are essential for effectively participating in a group discussion.' Do you agree? Substantiate your answer.

Course Outcome 5 (CO5):

1. Illustrate the creative thinking process with the help of a suitable example
2. Translate the following problem from verbal to graphic form and find the solution : *In a quiz, Ananth has 50 points more than Bimal, Chinmay has 60 points less than Ananth, and Dharini is 20 points ahead of Chinmay. What is the difference in points between Bimal and Dharini?*

3. List at least five ways in which the problem "How to increase profit?" can be redefined

Course Outcome 6 (CO6):

1. A group of engineers decided to brainstorm a design issue on a new product. Since no one wanted to disagree with the senior members, new ideas were not flowing freely. What group dynamics technique would you suggest to avoid this 'groupthink'? Explain the procedure.
2. "A group focuses on individual contribution, while a team must focus on synergy." Explain.
3. Identify the type of group formed / constituted in each of the given situations
 - a) A Police Inspector with subordinates reporting to him
 - b) An enquiry committee constituted to investigate a specific incident
 - c) The Accounts Department of a company
 - d) A group of book lovers who meet to talk about reading

Syllabus

Module 1

Overview of Life Skills: Meaning and significance of life skills, Life skills identified by WHO: Self-awareness, Empathy, Critical thinking, Creative thinking, Decision making, problem solving, Effective communication, interpersonal relationship, coping with stress, coping with emotion.

Life skills for professionals: positive thinking, right attitude, attention to detail, having the big picture, learning skills, research skills, perseverance, setting goals and achieving them, helping others, leadership, motivation, self-motivation, and motivating others, personality development, IQ, EQ, and SQ

Module 2

Self-awareness: definition, need for self-awareness; Coping With Stress and Emotions, Human Values, tools and techniques of SA: questionnaires, journaling, reflective questions, meditation, mindfulness, psychometric tests, feedback.

Stress Management: Stress, reasons and effects, identifying stress, stress diaries, the four A's of stress management, techniques, Approaches: action-oriented, emotion-oriented, acceptance-oriented, resilience, Gratitude Training,

Coping with emotions: Identifying and managing emotions, harmful ways of dealing with emotions, PATH method and relaxation techniques.

Morals, Values and Ethics: Integrity, Civic Virtue, Respect for Others, Living Peacefully. Caring, Sharing, Honesty, Courage, Valuing Time, Time management, Co operation, Commitment, Empathy, Self-Confidence, Character, Spirituality, Avoiding Procrastination, Sense of Engineering Ethics.

Module 3

21st century skills: Creativity, Critical Thinking, Collaboration, Problem Solving, Decision Making, Need for Creativity in the 21st century, Imagination, Intuition, Experience, Sources of Creativity, Lateral Thinking, Myths of creativity, Critical thinking Vs Creative thinking, Functions of Left Brain & Right brain, Convergent & Divergent Thinking, Critical reading & Multiple Intelligence.

Steps in problem solving: Problem Solving Techniques, Six Thinking Hats, Mind Mapping, Forced Connections. Analytical Thinking, Numeric, symbolic, and graphic reasoning. Scientific temperament and Logical thinking.

Module 4

Group and Team Dynamics: Introduction to Groups: Composition, formation, Cycle, thinking, Clarifying expectations, Problem Solving, Consensus, Dynamics techniques, Group vs Team, Team Dynamics, Virtual Teams. Managing team performance and managing conflicts, Intrapreneurship.

Module 5

Leadership: Leadership framework, entrepreneurial and moral leadership, vision, cultural dimensions. Growing as a leader, turnaround leadership, managing diverse stakeholders, crisis management. Types of Leadership, Traits, Styles, VUCA Leadership, Levels of Leadership, Transactional vs Transformational Leaders, Leadership Grid, Effective Leaders.

Lab Activities

Verbal

Effective communication and Presentation skills.

Different kinds of communication; Flow of communication; Communication networks, Types of barriers; Miscommunication

Introduction to presentations and group discussions.

Learning styles: visual, aural, verbal, kinaesthetic, logical, social, solitary; Previewing, KWL table, active listening, REAP method

Note-taking skills: outlining, non-linear note-taking methods, Cornell notes, three column note taking.

Memory techniques: mnemonics, association, flashcards, keywords, outlines, spider diagrams and mind maps, spaced repetition.

Time management: auditing, identifying time wasters, managing distractions, calendars and checklists; Prioritizing - Goal setting, SMART goals; Productivity tools and apps, Pomodoro technique.

Non Verbal:

Non-verbal Communication and Body Language: Forms of non-verbal communication; Interpreting body-language cues; Kinesics; Proxemics; Chronemics; Effective use of body language, Communication in a multi cultural environment.

Reference Books

1. Shiv Khera, You Can Win, Macmillan Books, New York, 2003.
2. Barun K. Mitra, "Personality Development & Soft Skills", Oxford Publishers, Third impression, 2017.
3. ICT Academy of Kerala, "Life Skills for Engineers", McGraw Hill Education (India) Private Ltd., 2016.
4. Caruso, D. R. and Salovey P, "The Emotionally Intelligent Manager: How to Develop and Use the Four Key Emotional Skills of Leadership", John Wiley & Sons, 2004.
5. Kalyana, "Soft Skill for Managers"; First Edition; Wiley Publishing Ltd, 2015.
6. Larry James, "The First Book of Life Skills"; First Edition, Embassy Books, 2016.
7. Shalini Verma, "Development of Life Skills and Professional Practice"; First Edition; Sultan Chand (G/L) & Company, 2014.
8. Daniel Goleman, "Emotional Intelligence"; Bantam, 2006.
9. Remesh S., Vishnu R.G., "Life Skills for Engineers", Ridhima Publications, First Edition, 2016.
10. Butterfield Jeff, "Soft Skills for Everyone", Cengage Learning India Pvt Ltd; 1 edition, 2011.
11. Training in Interpersonal Skills: Tips for Managing People at Work, Pearson Education, India; 6 edition, 2015.
12. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success, Pearson Education; 1 edition, 2013.



Code.	Course Name	L	T	P	Hrs	Credit
HUT 200	Professional Ethics	2	0	0	2	2

Preamble: To enable students to create awareness on ethics and human values.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to

CO 1	Understand the core values that shape the ethical behaviour of a professional.
CO 2	Adopt a good character and follow an ethical life.
CO 3	Explain the role and responsibility in technological development by keeping personal ethics and legal ethics.
CO 4	Solve moral and ethical problems through exploration and assessment by established experiments.
CO 5	Apply the knowledge of human values and social values to contemporary ethical values and global issues.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1								2			2	
CO 2								2			2	
CO 3								3			2	
CO 4								3			2	
CO 5								3			2	

Assessment Pattern

Bloom's category	Continuous Assessment Tests		End Semester Exam
	1	2	
Remember	15	15	30
Understood	20	20	40
Apply	15	15	30

Mark distribution

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 10 marks
Continuous Assessment Tests (2 Nos)	: 25 marks
Assignments/Quiz	: 15 marks

End Semester Examination Pattern: There will be two parts; Part A and Part B. Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Course Level Assessment Questions

Course Outcome 1 (CO1):

1. Define integrity and point out ethical values.
2. Describe the qualities required to live a peaceful life.
3. Explain the role of engineers in modern society.

Course Outcome 2 (CO2)

1. Derive the codes of ethics.
2. Differentiate consensus and controversy.
3. Discuss in detail about character and confidence.

Course Outcome 3(CO3):

1. Explain the role of professional's ethics in technological development.
2. Distinguish between self interest and conflicts of interest.
3. Review on industrial standards and legal ethics.

Course Outcome 4 (CO4):

1. Illustrate the role of engineers as experimenters.
2. Interpret the terms safety and risk.
3. Show how the occupational crimes are resolved by keeping the rights of employees.

Course Outcome 5 (CO5):

1. Exemplify the engineers as managers.
2. Investigate the causes and effects of acid rain with a case study.
3. Explore the need of environmental ethics in technological development.

Model Question paper

QP CODE:

Reg No: _____

PAGES:3

Name : _____

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY THIRD/FOURTH SEMESTER
B.TECH DEGREE EXAMINATION, MONTH & YEAR**

Course Code: HUT 200

Course Name: PROFESSIONAL ETHICS

Max. Marks: 100

Duration: 3 Hours

(2019-Scheme)

PART A

(Answer all questions, each question carries 3 marks)

1. Define empathy and honesty.
2. Briefly explain about morals, values and ethics.
3. Interpret the two forms of self-respect.
4. List out the models of professional roles.
5. Indicate the advantages of using standards.
6. Point out the conditions required to define a valid consent?
7. Identify the conflicts of interests with an example?
8. Recall confidentiality.
9. Conclude the features of biometric ethics.
10. Name any three professional societies and their role relevant to engineers.

(10x3 = 30 marks)

PART B

(Answer one full question from each module, each question carries 14 marks)

MODULE I

11. a) Classify the relationship between ethical values and law?

b) Compare between caring and sharing.

(10+4 = 14 marks)

Or

12. a) Exemplify a comprehensive review about integrity and respect for others.

b) Discuss about co-operation and commitment. (8+6 = 14 marks)

MODULE II

13.a) Explain the three main levels of moral developments, devised by Kohlberg.

b) Differentiate moral codes and optimal codes. (10+4 = 14 marks)

Or

14. a) Extrapolate the duty ethics and right ethics.

b) Discuss in detail the three types of inquiries in engineering ethics (8+6 = 14 marks)

MODULE III

15.a) Summarize the following features of morally responsible engineers.

(i) Moral autonomy

(ii) Accountability

b) Explain the rights of employees (8+6 = 14 marks)

Or

16. a) Explain the reasons for Chernobyl mishap ?

b) Describe the methods to improve collegiality and loyalty. (8+6 = 14 marks)

MODULE IV

17.a) Execute collegiality with respect to commitment, respect and connectedness.

b) Identify conflicts of interests with an example. (8+6 = 14 marks)

Or

18. a) Explain in detail about professional rights and employee rights.

b) Exemplify engineers as managers.

MODULE V

19.a) Evaluate the technology transfer and appropriate technology.

b) Explain about computer and internet ethics. (8+6 = 14 marks)

Or

20. a) Investigate the causes and effects of acid rain with a case study.

b) Conclude the features of ecocentric and biocentric ethics. (8+6 = 14 marks)

Syllabus

Module 1 – Human Values.

Morals, values and Ethics – Integrity- Academic integrity-Work Ethics- Service Learning- Civic Virtue- Respect for others- Living peacefully- Caring and Sharing- Honestly- courage-Cooperation commitment- Empathy-Self Confidence -Social Expectations.

Module 2 - Engineering Ethics & Professionalism.

Senses of Engineering Ethics - Variety of moral issues- Types of inquiry- Moral dilemmas –Moral Autonomy – Kohlberg’s theory- Gilligan’s theory- Consensus and Controversy-Profession and Professionalism- Models of professional roles-Theories about right action –Self interest-Customs and Religion- Uses of Ethical Theories.

Module 3- Engineering as social Experimentation.

Engineering as Experimentation – Engineers as responsible Experimenters- Codes of Ethics- Plagiarism- A balanced outlook on law - Challenges case study- Bhopal gas tragedy.

Module 4- Responsibilities and Rights.

Collegiality and loyalty – Managing conflict- Respect for authority- Collective bargaining- Confidentiality- Role of confidentiality in moral integrity-Conflicts of interest- Occupational crime- Professional rights- Employee right- IPR Discrimination.

Module 5- Global Ethical Issues.

Multinational Corporations- Environmental Ethics- Business Ethics- Computer Ethics -Role in Technological Development-Engineers as Managers- Consulting Engineers- Engineers as Expert witnesses and advisors-Moral leadership.

Text Book

1. M Govindarajan, S Natarajan and V S Senthil Kumar, Engineering Ethics, PHI Learning Private Ltd, New Delhi,2012.
2. R S Naagarazan, A text book on professional ethics and human values, New age international (P) limited ,New Delhi,2006.

Reference Books

1. Mike W Martin and Roland Schinzinger, Ethics in Engineering,4th edition, Tata McGraw Hill Publishing Company Pvt Ltd, New Delhi,2014.
2. Charles D Fleddermann, Engineering Ethics, Pearson Education/ Prentice Hall of India, New Jersey,2004.
3. Charles E Harris, Michael S Protchard and Michael J Rabins, Engineering Ethics- Concepts and cases, Wadsworth Thompson Learning, United states,2005.
4. [http://www.slideword.org/slidestag.aspx/human-values-and-Professional-ethics.](http://www.slideword.org/slidestag.aspx/human-values-and-Professional-ethics)

Course Contents and Lecture Schedule

SL.No	Topic	No. of Lectures
1	Module 1 – Human Values.	
1.1	Morals, values and Ethics, Integrity, Academic Integrity, Work Ethics	1
1.2	Service Learning, Civic Virtue, Respect for others, Living peacefully	1
1.3	Caring and Sharing, Honesty, Courage, Co-operation commitment	2
1.4	Empathy, Self Confidence, Social Expectations	1
2	Module 2- Engineering Ethics & Professionalism.	
2.1	Senses of Engineering Ethics, Variety of moral issues, Types of inquiry	1
2.2	Moral dilemmas, Moral Autonomy, Kohlberg's theory	1
2.3	Gilligan's theory, Consensus and Controversy, Profession & Professionalism, Models of professional roles, Theories about right action	2
2.4	Self interest-Customs and Religion, Uses of Ethical Theories	1
3	Module 3- Engineering as social Experimentation.	
3.1	Engineering as Experimentation, Engineers as responsible Experimenters	1
3.2	Codes of Ethics, Plagiarism, A balanced outlook on law	2
3.3	Challenger case study, Bhopal gas tragedy	2
4	Module 4- Responsibilities and Rights.	
4.1	Collegiality and loyalty, Managing conflict, Respect for authority	1
4.2	Collective bargaining, Confidentiality, Role of confidentiality in moral integrity, Conflicts of interest	2
4.3	Occupational crime, Professional rights, Employee right, IPR Discrimination	2
5	Module 5- Global Ethical Issues.	
5.1	Multinational Corporations, Environmental Ethics, Business Ethics, Computer Ethics	2
5.2	Role in Technological Development, Moral leadership	1
5.3	Engineers as Managers, Consulting Engineers, Engineers as Expert witnesses and advisors	2

CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
			MCN202	CONSTITUTION OF INDIA		

Preamble:

The study of their own country constitution and studying the importance environment as well as understanding their own human rights help the students to concentrate on their day to day discipline. It also gives the knowledge and strength to face the society and people.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to

CO 1	Explain the background of the present constitution of India and features.
CO 2	Utilize the fundamental rights and duties.
CO 3	Understand the working of the union executive, parliament and judiciary.
CO 4	Understand the working of the state executive, legislature and judiciary.
CO 5	Utilize the special provisions and statutory institutions.
CO 6	Show national and patriotic spirit as responsible citizens of the country

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1						2	2	2		2		
CO 2						3	3	3		3		
CO 3						3	2	3		3		
CO 4						3	2	3		3		
CO 5						3	2	3		3		
CO 6						3	3	3		2		

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination
	1	2	
Remember	20	20	40
Understand	20	20	40
Apply	10	10	20
Analyse			

Evaluate			
Create			

Mark distribution

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 10 marks
Continuous Assessment Test (2 numbers)	: 25 marks
Assignment/Quiz/Course project	: 15 marks

End Semester Examination Pattern: There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Course Level Assessment Questions**Course Outcome 1 (CO1):**

- 1 Discuss the historical background of the Indian constitution.
- 2 Explain the salient features of the Indian constitution.
- 3 Discuss the importance of preamble in the implementation of constitution.

Course Outcome 2 (CO2)

- 1 What are fundamental rights ? Examine each of them.
- 2 Examine the scope of freedom of speech and expression underlying the constitution.
- 3 The thumb impression of an accused is taken by the police against his will. He contends that this is a violation of his rights under Art 20(3) of the constitution. Decide.

Course Outcome 3(CO3):

- 1 Explain the powers of the President to suspend the fundamental rights during emergency.

- 2 Explain the salient features of appeal by special leave.
3. List the constitutional powers of President.

Course Outcome 4 (CO4):

- 1 Discuss the constitutional powers of Governor.
- 2 Examine the writ jurisdiction of High court.
- 3 Discuss the qualification and disqualification of membership of state legislature.

Course Outcome 5 (CO5):

- 1 Discuss the duties and powers of comptroller of auditor general.
- 2 Discuss the proclamation of emergency.
- 3 A state levies tax on motor vehicles used in the state, for the purpose of maintaining roads in the state. X challenges the levy of the tax on the ground that it violates the freedom of interstate commerce guaranteed under Art 301. Decide.

Course Outcome 6 (CO6):

- 1 Explain the advantages of citizenship.
- 2 List the important principles contained in the directive principles of state policy.
- 3 Discuss the various aspects contained in the preamble of the constitution

Model Question paper

PART A

(Answer all questions. Each question carries 3 marks)

- 1 Define and explain the term constitution.
- 2 Explain the need and importance of Preamble.
- 3 What is directive principle of state policy?
- 4 Define the State.
- 5 List the functions of Attorney general of India.

- 6 Explain the review power of Supreme court.
- 7 List the qualifications of Governor.
- 8 Explain the term and removal of Judges in High court.
- 9 Explain the powers of public service commission.
- 10 List three types of emergency under Indian constitution.

(10X3=30marks)

PART B

(Answer on question from each module. Each question carries 14 marks)

Module 1

- 11 Discuss the various methods of acquiring Indian citizenship.
- 12 Examine the salient features of the Indian constitution.

Module 2

- 13 A high court passes a judgement against X. X desires to file a writ petition in the supreme court under Art32, on the ground that the judgement violates his fundamental rights. Advise him whether he can do so.
- 14 What is meant by directive principles of State policy? List the directives.

Module3

- 15 Describe the procedure of election and removal of the President of India.
- 16 Supreme court may in its discretion grant special leave to appeal. Examine the situation.

Module 4

- 17 Discuss the powers of Governor.
- 18 X filed a writ petition under Art 226 which was dismissed. Subsequently, he filed a writ petition under Art 32 of the constitution, seeking the same remedy. The Government argued that the writ petition should be dismissed, on the ground of res judicata. Decide.

Module 5

19 Examine the scope of the financial relations between the union and the states.

20 Discuss the effects of proclamation of emergency.

(14X5=70marks)

Syllabus

Module 1 Definition, historical back ground, features, preamble, territory, citizenship.

Module 2 State, fundamental rights, directive principles, duties.

Module 3 The machinery of the union government.

Module 4 Government machinery in the states

Module 5 The federal system, Statutory Institutions, miscellaneous provisions.

Text Books

1 D D Basu, Introduction to the constitution of India, Lexis Nexis, New Delhi, 24e, 2019

2 PM Bhakshi, The constitution of India, Universal Law, 14e, 2017

Reference Books

1 Ministry of law and justice, The constitution of India, Govt of India, New Delhi, 2019.

2 JN Pandey, The constitutional law of India, Central Law agency, Allahabad, 51e, 2019

3 MV Pylee, India's Constitution, S Chand and company, New Delhi, 16e, 2016

Course Contents and Lecture Schedule

No	Topic	No. of Lectures
1	Module 1	
1.1	Definition of constitution, historical back ground, salient features of the constitution.	1
1.2	Preamble of the constitution, union and its territory.	1
1.3	Meaning of citizenship, types, termination of citizenship.	2
2	Module 2	
2.1	Definition of state, fundamental rights, general nature, classification, right to equality ,right to freedom , right against exploitation	2

HUMANITIES

2.2	Right to freedom of religion, cultural and educational rights, right to constitutional remedies. Protection in respect of conviction for offences.	2
2.3	Directive principles of state policy, classification of directives, fundamental duties.	2
3	Module 3	
3.1	The Union executive, the President, the vice President, the council of ministers, the Prime minister, Attorney-General, functions.	2
3.2	The parliament, composition, Rajya sabha, Lok sabha, qualification and disqualification of membership, functions of parliament.	2
3.3	Union judiciary, the supreme court, jurisdiction, appeal by special leave.	1
4	Module 4	
4.1	The State executive, the Governor, the council of ministers, the Chief minister, advocate general, union Territories.	2
4.2	The State Legislature, composition, qualification and disqualification of membership, functions.	2
4.3	The state judiciary, the high court, jurisdiction, writs jurisdiction.	1
5	Module 5	
5.1	Relations between the Union and the States, legislative relation, administrative relation, financial Relations, Inter State council, finance commission.	1
5.2	Emergency provision, freedom of trade commerce and inter course, comptroller and auditor general of India, public Services, public service commission, administrative Tribunals.	2
5.3	Official language, elections, special provisions relating to certain classes, amendment of the Constitution.	2



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Activities conducted relevant to
Gender
Human Values
Professional Ethics
Environment and sustainability
2018-2019



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DATE: 22/04/2018 TIME : 10:00 to 16:00 VENUE : Fort Kochi			
TITLE OF ACTIVITY :	CLEANING CAMPAIGN		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	YOUNG VIBES ASSOCIATION ,KOCHI
VOLUNTEERS INCHARGE:	RAMEES SALIM, ANEENA ANEER		



CLEANING CAMPAIGN



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DATE: 22/04/2018 TIME : 15:00 to 17:30		VENUE : Fort Kochi	
TITLE OF ACTIVITY :	BEACH EVACUATION		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	CIVIL ENGINEERING	COLLABORATING AGENCY :	KERALA POLICE
VOLUNTEERS INCHARGE:	RAMEES SALIM, ANEENA ANEER		



BEACH EVACUATION



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DATE: 10/05/2018 TIME : 10:00 to 16:00		VENUE : PALLISSERRY	
TITLE OF ACTIVITY :	POND CLEANING		
NUMBER OF STUDENTS:	26	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	ANBODU KOCHI TEAM
VOLUNTEERS INCHARGE:	ANTONY JOSE, ROWEENA THERASA		



POND CLEANING



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DATE: 05/06/2018 TIME : 10:00 to 15:00 VENUE: SSET Campus			
TITLE OF ACTIVITY :	ENVIRONMENT DAY		
NUMBER OF STUDENTS:	20	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	Kerala Legal Service Authority, district Shuchithwa mission
VOLUNTEERS INCHARGE:	JITHU VARGHESE		



ENVIRONMENT DAY



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DATE: 06/07/2018 TIME : 10:00 to 15:00		VENUE: Govt Health Center Palisserry	
TITLE OF ACTIVITY :	DENGUE AWARENESS		
NUMBER OF STUDENTS:	18	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	MECHANICAL ENGINEERING	COLLABORATING AGENCY :	Pallissery Primary health Centre
VOLUNTEERS INCHARGE:	AJAY S KUMAR, JAYESH MOHAN		



DENGUE AWARENESS



Principle

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DATE: 06/07/2018 TIME : 10:00 to 14:00		VENUE : Ernakulam jetty to Vypin ferry	
TITLE OF ACTIVITY :	KOCHI TRANSPORTATION		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	SHRI, MOHAMMED Y SAFIRULLA IAS
VOLUNTEERS INCHARGE:	JESTIN JIJI		



KOCHI TRANSPORTATION



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DATE: 14/07/2018 - 19/07/2018 TIME: 10:00 to 15:00		Pallissery Primary Health Centre	
TITLE OF ACTIVITY :	PUNARJJANI – 6 DAY CAMP		
NUMBER OF STUDENTS:	62	NUMBER OF FACULTY MEMBERS:	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	KERALA STATE YOUTH WELFARE BOARD
VOLUNTEERS INCHARGE:	RAHUL S MENON, ANTONY JOSE		



PUNARJJANI – 6 DAY CAMP



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DATE: 20/07/2018 - 21/07/2018 TIME :10:00 to 14:00		VENUE : Parakkadavu , Eloor , Karumalloor	
TITLE OF ACTIVITY :	DISASTER MANAGEMENT		
NUMBER OF STUDENTS:	26	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	COMPUTER SCIENCE & ENGINEERING	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	JAYESH MOHAN, AGATHA AJI		



DISASTER MANAGEMENT



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DATE:11/08/2018 - 12/08/2018 TIME:0930 to 15:00		Venue - Relief camps	
TITLE OF ACTIVITY :	FOOD COLLECTION FOR RELIEF CAMP		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	DISTRICT ADMINISTRATION AND DISASTER MANAGEMENT
VOLUNTEERS INCHARGE:	RAMEES SALIM		



FOOD COLLECTION FOR RELIEF CAMP



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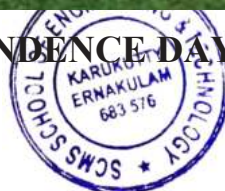
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DATE: 15/08/2018 TIME: 09:00 to 11:00		Venue - Campus	
TITLE OF ACTIVITY :	INDEPENDENCE DAY CELEBRATION		
NUMBER OF STUDENTS:	45	NUMBER OF FACULTY MEMBERS:	5
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	RAMEES SALIM, JITHU VARGHESE		



INDEPENDENCE DAY CELEBRATION



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DATE: 27/08/2018 - 30/08/2018 TIME: 9:30 to 15:00		VENUE:affected areas of Karumalloor.	
TITLE OF ACTIVITY :	DAMAGE SURVEY		
NUMBER OF STUDENTS:	32	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	CIVIL ENGINEERING	COLLABORATING AGENCY :	KARUMALLOOR PANCHAYATH OFFICE
VOLUNTEERS INCHARGE:	ANTONY JOSE		



DAMAGE SURVEY



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DATE: 31/08/2018 - 01/09/2018 TIME: 09:00 to 14:00 VENUE: MELOOR			
TITLE OF ACTIVITY :	MELOOR WASTE MANAGEMENT		
NUMBER OF STUDENTS:	38	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	MELOOR GRAMA PANCHAYAT
VOLUNTEERS INCHARGE:	AJAY S KUMAR, RAMEES SALIM		



MELOOR WASTE MANAGEMENT

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DATE: 15/09/2018		TIME: 10:00 to 13:00		VENUE: CAMPUS	
TITLE OF ACTIVITY :	ORIENTATION THROUGH GROUP DYNAMICS				
NUMBER OF STUDENTS:	60	NUMBER OF FACULTY MEMBERS:	2		
ORGANISED BY:	BASIC SCIENCE & HUMANITIES	COLLABORATING AGENCY :	NIL		
VOLUNTEERS INCHARGE:	MINU N SUNIL, AJAY S KUMAR				



ORIENTATION THROUGH GROUP DYNAMICS



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DATE:16/09/2018		TIME: 10:00 to 13:00		VENUE: CAMPUS	
TITLE OF ACTIVITY :	ORIENTATION PHILOSOPHY OF NSS				
NUMBER OF STUDENTS:	60	NUMBER OF FACULTY MEMBERS:	2		
ORGANISED BY:	NSS	COLLABORATING AGENCY :	NIL		
VOLUNTEERS INCHARGE:	JAYESH MOHAN, ATHULYA K				



ORIENTATION PHILOSOPHY OF NSS



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DATE: 22/09/2018 TIME: 10:00 to 18:00 VENUE: Kanakkankadav, Pressumpady, Alamattom, Aluva, Chalakudy			
TITLE OF ACTIVITY :	KIT DISTRIBUTION		
NUMBER OF STUDENTS:	46	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	MECHANICAL ENGINEERING	COLLABORATING AGENCY :	Prof. AKHIL
VOLUNTEERS INCHARGE:	C N KRISHNADAS		



KIT DISTRIBUTION



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DATE: 02/10/2018		TIME: 10:00 to 13:00		VENUE: CAMPUS	
TITLE OF ACTIVITY :	GANDHI JAYANTHI OBSERVANCE- suchitwa mission green campus clean campus,debate,bio farming,relief kit packing				
NUMBER OF STUDENTS:	28	NUMBER OF FACULTY MEMBERS:	2		
ORGANISED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	NIL		
VOLUNTEERS INCHARGE:	AMAL K S, ATHULYA K				



GANDHI JAYANTHI OBSERVANCE



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DATE: 12/10/2018 TIME: 12:00 to 13:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	CORE COMMITTEE MEETING		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	1
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	ATHULYA K		



CORE COMMITTEE MEETING



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DATE: 23/10/2018 TIME: 10:00 to 15:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	BLOOD DONATION CAMP		
NUMBER OF STUDENTS:	60	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	IMA WITH HDFC BANK
VOLUNTEERS INCHARGE:	ATHULYA K, AMAL K S		



BLOOD DONATION CAMP



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DATE: 10/11/2018, 12/11/2018, 24/11/2018		TIME: 14:00 to 18:00		VENUE : CAMPUS
TITLE OF ACTIVITY :	CHEKUTTY DOLL MAKING			
NUMBER OF STUDENTS:	60	NUMBER OF FACULTY MEMBERS:	3	
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	WEAVERS OF CHENDAMANGALAM	
VOLUNTEERS INCHARGE:	BHARATH NAIR			



CHEKUTTY DOLL MAKING



Principle

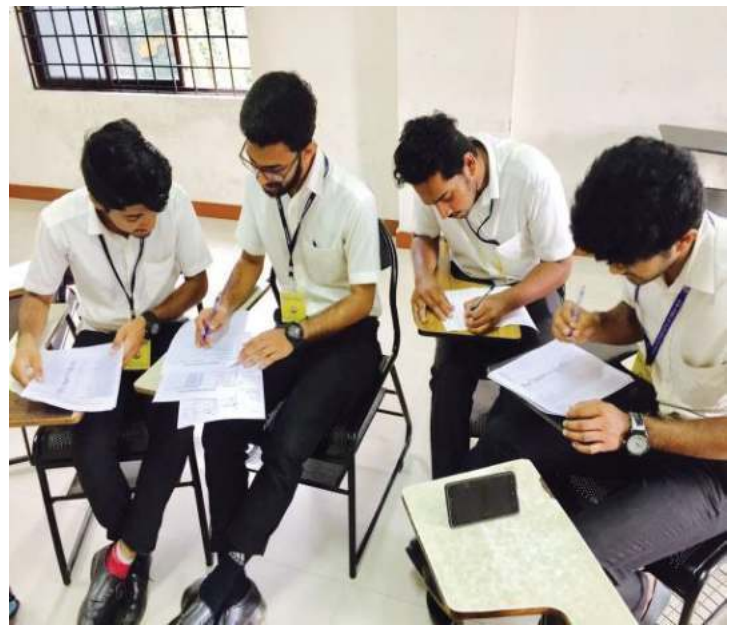
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DATE; 16/11/2018 - 17/11/2018 TIME: 12:00 to 15:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	PLACEMENT VOLUNTEERING		
NUMBER OF STUDENTS:	4	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	COMPUTER SCIENCE & ENGINEERING	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	GIJO GEORGE, RAHUL S MENON		



PLACEMENT VOLUNTEERING



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DATE: 25/11/2018 TIME: 10:00 to 13:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	ORGANIC FARMING		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	RAGIN KRISHNA, KIRAN JOHN		



ORGANIC FARMING



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DATE: 28/11/2018 TIME: 13:00 to 16:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	ANTI-NARCOTICS CAMPAIGN		
NUMBER OF STUDENTS:	59	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	ATHULYA K, ASHWIN B		



ANTI-NARCOTICS CAMPAIGN



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DATE : 22/12/2018 - 02/01/2019 TIME: 09:00 to 20:00 VENUE:Thiruvairanikulam temple			
TITLE OF ACTIVITY :	THIRUVAIRANIKULAM TEMPLE GREEN PROTOCOL		
NUMBER OF STUDENTS:	58	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	ATHULYA K, AMAL K S		

തിരുവൈരാണിക്കുളത്ത് സേവനസന്നദ്ധരായി എൻസിഎംഎസ് വൊളന്റിയർമാർ

തിരുവൈരാണിക്കുളം പാർവതി ദേവിയുടെ 12 ദിവസത്തെ നടതുറപ്പ് ഉത്സവം നടക്കുന്ന മഹാദേവ ക്ഷേത്രത്തിൽ കറുകുറ്റി എൻസിഎംഎസ് കോളജിലെ എൻസിഎംഎസ് വൊളന്റിയർമാരുടെ സേവനം ശ്രദ്ധ നേടുന്നു. ആൺകുട്ടികളും പെൺകുട്ടികളും ഉൾപ്പെടെ 130പേർ ക്ഷേത്ര പരിസരത്ത് ക്യാഫ് ചെയ്യുകയാണ്.

പുലർച്ചെ 3നു നട തുറന്നതിനു ശേഷം ഇവർ പ്രഭാത സവാരിക്കിറങ്ങും. വഴിയിൽ കാണുന്ന മാലിന്യം ശേഖരിക്കും. തുടർന്ന് പാർക്കിങ് ഗ്രൗണ്ടുകളിൽ എത്തുന്ന വാഹനങ്ങളിലുള്ളവർക്കു ക്ഷേത്ര പരിസരത്തു നിലവിലുള്ള ഗ്രീൻ പ്രോട്ടോക്കോളിനെ കുറിച്ച് ബോധവൽക്കരണം നൽകും. ക്ഷേത്ര പരിസരത്തെ കച്ചവട സ്ഥാപനങ്ങളിൽ നിരോധിത പ്ലാസ്റ്റിക് ഉൽപ്പന്നങ്ങൾ ഉപയോഗിക്കുന്നുണ്ടോയെന്നും വിദ്യാർഥികൾ പരിശോധിക്കുന്നുണ്ട്. മാലിന്യം ശേഖരിച്ച സ്ഥലത്ത് അവ തരംതിരിക്കുന്നതിലും എൻസിഎംഎസ് വൊളന്റിയർമാരുടെ മേൽനോട്ടമുണ്ട്.



ക്ഷേത്രപരിസരത്തെ മോഷണം തടയാൻ പൊലീസ് നടപ്പാക്കിയ സേഫ്റ്റി പിൻ പദ്ധതിയിലും വൊളന്റിയർമാർ പ്രധാനപങ്കുവഹിക്കുന്നുണ്ട്. ഇവർ ഭക്തരുടെ ആരോണം വസ്ത്രത്തോടു ചേർത്ത് പിൻ ചെയ്തു കൊടുക്കും.

തുടർച്ചയായ മൂന്നാം വർഷമാണ് എൻസിഎംഎസ് വിദ്യാർഥികൾ നടതുറപ്പ് ഉത്സവക്കാലത്ത് സേവനരംഗത്തിറങ്ങുന്നത്. എൻസിഎംഎസ് പ്രോഗ്രാം ഓഫീസർമാരായ എ.രാകേഷ്, കെ.സുജയ്, വൊളന്റിയർ സെക്രട്ടറിമാരായ ഫാത്തിമ ഹുസൈൻ, അമൽ ഹരിദാസ്, ടി.എൻ.അനീസ്, കെ.ടി.അതുല്യ എന്നിവർ നേതൃത്വം നൽകുന്നു. ക്ഷേത്ര ട്രസ്റ്റിന്റെ ശുചിത്വ യജ്ഞം കൺവീനർ കെ.വി.മനോജ് പ്രവർത്തനങ്ങൾ ഏകോപിപ്പിക്കുന്നു.

THIRUVAIRANIKULAM TEMPLE GREEN PROTOCOL

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DATE: 03/02/2019 TIME: 13:00 to 16:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	NSS ORIENTATION		
NUMBER OF STUDENTS:	36	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	ANZU M J, JAYESH MOHAN		



NSS ORIENTATION



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DATE: 4/2/2019-9/2/2019 TIME: 10:00 to 16:00 VENUE:Palissery school			
TITLE OF ACTIVITY :	DIGITALISATION		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS:	1
ORGANISED BY:	COMPUTER SCIENCE AND ENGINEERING	COLLABORATING AGENCY :	GOVT.HIGH SCHOOL PALISSERY
VOLUNTEERS INCHARGE:	GIJO GEORGE		

DIGITALISATION



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DATE: 10/02/2019 TIME: 14:00 to 16:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	ORIENTATION, GROUP DISCUSSION		
NUMBER OF STUDENTS:	34	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	JAYESH MOHAN		



ORIENTATION, GROUP DISCUSSION



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DATE : 18/02/2019 TIME: 12:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	POSTER MAKING -CANCER		
NUMBER OF STUDENTS:	18	NUMBER OF FACULTY MEMBERS:	1
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	C N KRISHNADAS		



POSTER MAKING CANCER



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DATE: 20/02/2019 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	POSTER MAKING ON ROAD SAFETY		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	CIVIL ENGINEERING	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	SNEHA P S		



POSTER MAKING ON ROAD SAFETY



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DATE: 24/02/2019 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	DEBATE		
NUMBER OF STUDENTS:	18	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY:	BASIC SCIENCE & HUMANITIES	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	JAYESH MOHAN,ATHULYA K		



DEBATE



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DATE: 25/02/2019 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	POSTER MAKING ON POLLUTION		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS:	1
ORGANISED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	AGATHA AJI		



POSTER MAKING ON POLLUTION



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DATE: 27/02/2019 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	POSTER MAKING - SMOKING KILLS		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	JAYESH MOHAN		



POSTER MAKING - SMOKING KILLS



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DATE: 17/03/2019 TIME: 13:00 to 16:00 VENUE:CAMPUS			
TITLE OF ACTIVITY:	ORIENTATION ON WATER CONSERVATION		
NUMBER OF STUDENTS:	34	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	CIVIL ENGINEERING	COLLABORATING AGENCY:	NIL
VOLUNTEERS INCHARGE:	ASHWIN B, KIRAN JOHN		



ORIENTATION ON WATER CONSERVATION



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DATE: 22/03/2019 TIME: 12:30 to 15:30 VENUE:CAMPUS			
TITLE OF ACTIVITY :	POSTER MAKING - SOCIAL MEDIA INFLUENCE IN YOUTH		
NUMBER OF STUDENTS:	26	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	JAYESH MOHAN		



POSTER MAKING - SOCIAL MEDIA INFLUENCE IN YOUTH



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DATE: 23/03/2019 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	ORIENTATION		
NUMBER OF STUDENTS:	22	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	AGATHA AJI		



ORIENTATION



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Activities conducted relevant to
Gender
Human Values
Professional Ethics
Environment and sustainability
2019-2020



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DATE:12/04/2019 TIME: 10:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	BLOOD DONATION CAMP		
NUMBER OF STUDENTS:	18	NUMBER OF FACULTY MEMBERS:	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	General Hospital EKM
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, ATHULYA S THOMAS, FATHIMA HUSSAIN, JAYAKRISHNAN, CS KRISHNADAS		



BLOOD DONATION CAMP



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DATE: 07/04/2019 TIME: 10:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	BIOFARMING LET'S GO BACK TO GREEN		
NUMBER OF STUDENTS:	24	NUMBER OF FACULTY MEMBERS	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, RAGIN KRISHNA, RITHWIK V, KIRAN JOHN		



BIOFARMING : LET'S GO BACK TO GREEN



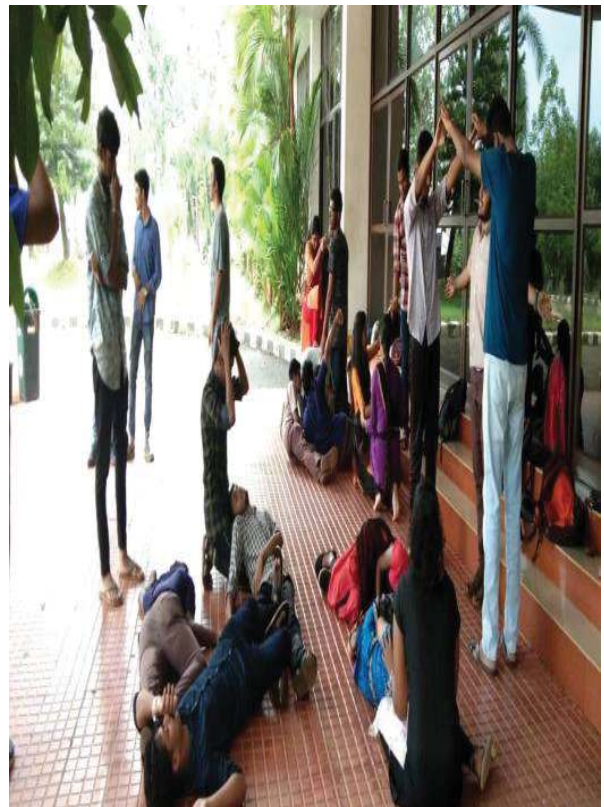
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DATE: 01/05/2019		TIME: 10:00 to 12:00		VENUE: CAMPUS	
TITLE OF ACTIVITY :	ENROLLMENT AND ORIENTATION PROGRAM				
NUMBER OF STUDENTS:	19		NUMBER OF FACULTY MEMBERS	2	
ORGANISED BY:	NSS UNIT SSET		COLLABORATING AGENCY :	NIL	
VOLUNTEERS INCHARGE:	ATHULYA S THOMAS, FATHIMA HUSSAIN, C S KRISHNADAS, KAILASNATH, JOSEPH JOHN				



ENROLLMENT AND ORIENTATION PROGRAM



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DATE: 06/06/19 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	ENVIRONMENTAL DAY		
NUMBER OF STUDENTS:	20	NUMBER OF FACULTY MEMBERS	2
ORGANISED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	ANEES FAHIM, ATHULYA S THOMAS, ASWANTH R, ATHUL S, JISHNU CHANDRAN		



ENVIRONMENTAL DAY



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DATE:07/07/2019 TIME: 09:00 to 15:00 VENUE:CHELLANAM			
TITLE OF ACTIVITY :	A HELPING HAND TO THE FISHERMAN AT CHELLANAM		
NUMBER OF STUDENTS:	24	NUMBER OF FACULTY MEMBERS	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	Voluntary work
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, AMAL JAMES, EBIN ANTONY, JAYAKRISHNAN R		



A HELPING HAND TO THE FISHERMEN AT CHELLANAM



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DATE: 03/07/19 TIME: 09:00 to 15:00 VENUE: Mutton and Ambattukavu metro station			
TITLE OF ACTIVITY :	CLEAN ERNAKULAM PROJECT		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	Anbodu kochi
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, ANADHU AJAY, ABHIRAM KT, CS KRISHNADAS		



CLEAN ERNAKULAM PROJECT



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DATE: 04/08/19 TIME: 13:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	LEADERSHIP TRAINING PROGRAM		
NUMBER OF STUDENTS:	20	NUMBER OF FACULTY MEMBERS	3
ORGANISED BY:	MECHANICAL ENGG.	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	ATHULYA S THOMAS, FATHIMA HUSSAIN, ASWIN B, ADHARSH P, PRANAV P		



LEADERSHIP TRAINING PROGRAM



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DATE: 09/09/19 TIME: 10:00 to 15:00 VENUE: Anugraha sadan, Koodapuzha, Chalakudy			
TITLE OF ACTIVITY :	VISIT TO A VERY SPECIAL PLACE		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, ASWANTH R, CS KRISHNADAS		



VISIT TO A VERY SPECIAL PLACE



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DATE: 15/09/19 TIME: 10:00 to 15:00 VENUE:Konnakuzhy Athirapally			
TITLE OF ACTIVITY :	THAIVERU		
NUMBER OF STUDENTS:	16	NUMBER OF FACULTY MEMBERS	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	Kerala Forest Department
VOLUNTEERS INCHARGE:	ANEES FAHIM, ATHULYA S THOMAS, ANSTON SEJO, RAGIN KRISHNA, KIRAN JOHN		



THAIVERU



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DATE: 23/09/2019 TIME: 15:00 to 18:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	BADGE MAKING		
NUMBER OF STUDENTS:	12	NUMBER OF FACULTY MEMBERS	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, ASWANTH R, KRISHNADAS, ANSTON SEJO		



BADGE MAKING



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DATE: 24/09/19 TIME: 10:00 to 13:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	ORIENTATION CLASS		
NUMBER OF STUDENTS:	51	NUMBER OF FACULTY MEMBERS	4
ORGANISED BY:	COMPUTER ENGG	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	ANEES FAHIM, ATHULYA S THOMAS, JAYAKRISHNAN R, RITHWIK V, KIRAN JOHN		



ORIENTATION CLASS



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DATE: 24/09/2019 TIME: 10:00 to 15:00 VENUE: CAMPUS			
TITLE OF ACTIVITY :	BLOOD DONATION CAMP		
NUMBER OF STUDENTS:	12	NUMBER OF FACULTY MEMBERS	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	IMA Blood Bank
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, CS KRISHNADAS, KIRAN JOHN		



BLOOD DONATION CAMP



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DATE: 25/09/19 TIME: 13:30 to 15:30 VENUE:CAMPUS			
TITLE OF ACTIVITY :	VOLUNTEERS MEET		
NUMBER OF STUDENTS:	30	NUMBER OF FACULTY MEMBERS	3
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	ANEES FAHIM, ATHULYA S THOMAS, RAGIN KRISHNA, RITHWIK V		



Volunteer's meet



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DATE: 09/01/2020 – 15/01/2020 TIME: 09:00 to 20:00 VENUE:Thiruvairanikulam			
TITLE OF ACTIVITY :	Green Protocol - THIRUVAIRANIKULAM WORK		
NUMBER OF STUDENTS:	28	NUMBER OF FACULTY MEMBERS	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, ATHULYA S THOMAS, FATHIMA HUSSAIN, ATHUL S, ARJUN MOHAN, KIRAN JOHN		



THIRUVAIRANIKULAM WORK



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ERNAKULAM, KERALA-683 576



SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

Vidya Nagar, Palissery, Karukutty, Kerala 683576

DATE: 26/01/2020 TIME: 09:00 to 10:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	REPUBLIC DAY CELEBRATION		
NUMBER OF STUDENTS:	20	NUMBER OF FACULTY MEMBERS	5
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	AMAL HARIDAS, ANEES FAHIM, ATHULYA S THOMAS, FATHIMA HUSSAIN, GOKUL CS, CS KRISHNADAS, RITHWIK V		



REPUBLIC DAY CELEBRATION



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DATE: 26/01/2020 TIME: 10:00 to 15:00 VENUE:CAMPUS			
TITLE OF ACTIVITY :	SHORT FILM MAKING		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS	2
ORGANISED BY:	BS&H	COLLABORATING AGENCY :	
VOLUNTEERS INCHARGE:	ANEES FAHIM, ATHULYA S THOMAS, KRISHNADAS, FEBIN SHAJU		



SHORT FILM MAKING



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Activities conducted relevant to
Gender
Human Values
Professional Ethics
Environment and sustainability
2019-2020



SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

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DATE: 5/06/2020 TIME: 10:00 to 15:00 VENUE: HOUSES of participants			
TITLE OF ACTIVITY :	ENVIRONMENT DAY		
NUMBER OF STUDENTS:	134	NUMBER OF FACULTY MEMBERS :	2
ORGANIZED BY:	ENVIRONMENT CLUB	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ARYAN C RAJAN, THOMAS SHAJI		



ENVIRONMENT DAY



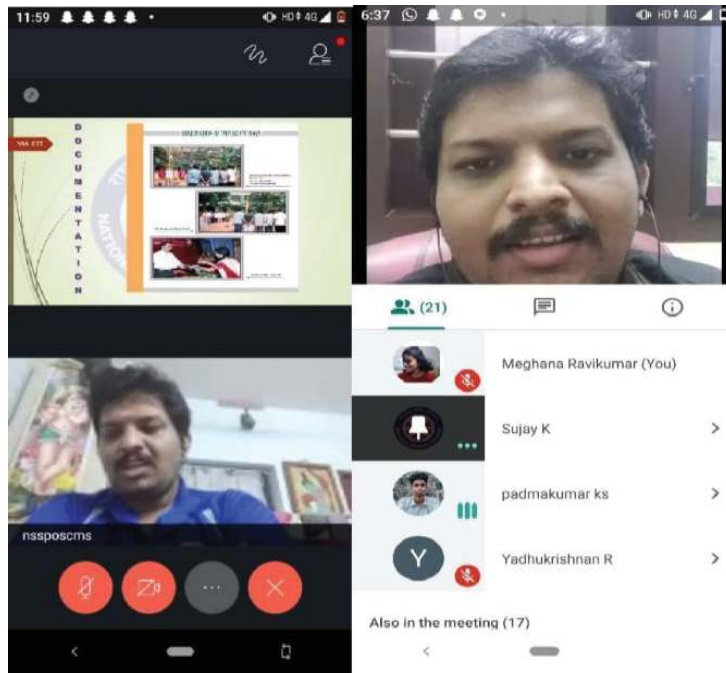
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DATE:14/06/2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY:	GENERAL ORIENTATION FOR NSS VOLUNTEERS		
NUMBER OF STUDENTS:	134	NUMBER OF FACULTY MEMBERS:	1
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY:	NONE
VOLUNTEERS INCHARGE:	ARJUN MOHAN,NIVYA ANTONY		



GENERAL ORIENTATION FOR NSS VOLUNTEERS



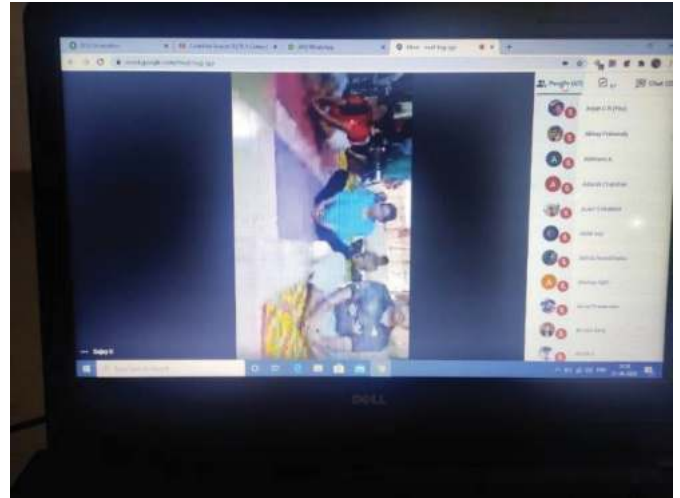
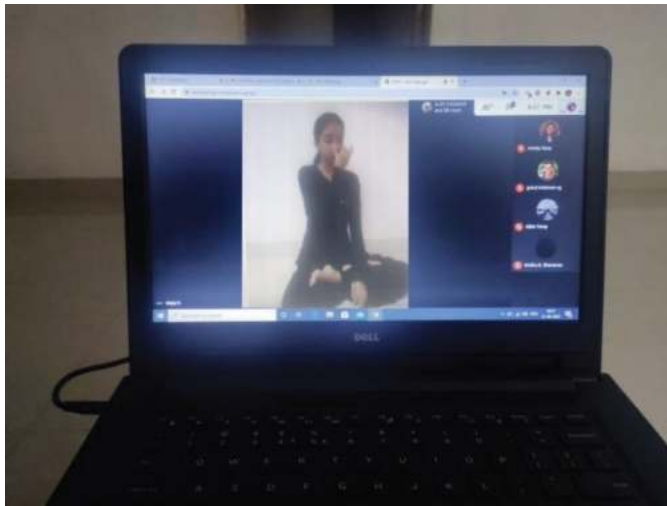
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DATE: 21/06/2020 TIME: 13:00 to 15:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	YOGA DAY CAMP		
NUMBER OF STUDENTS:	147	NUMBER OF FACULTY MEMBERS:	1
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY:	NONE
VOLUNTEERS INCHARGE:	ANAKH VALSAN, RAEESA UMMAR		



YOGA DAY CAMP



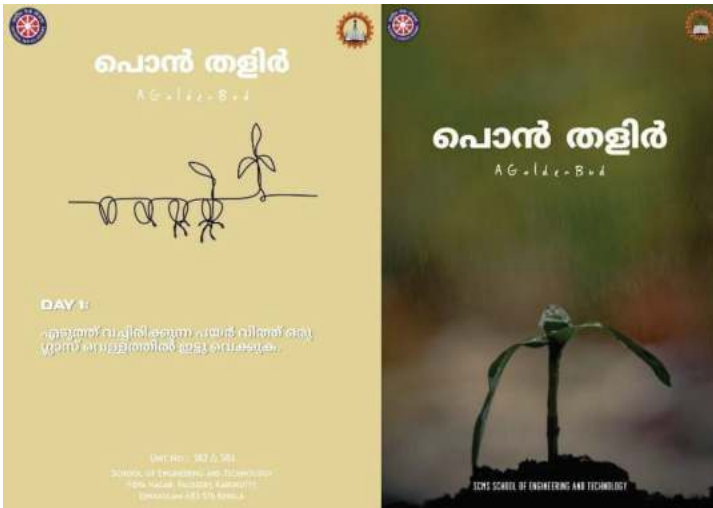
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SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

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DATE: 07/07/2020 - 14/07/2020 TIME: 13:00 to 15:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	Green Protocol - PONTALIR- A GOLDEN BUD		
NUMBER OF STUDENTS:	148	NUMBER OF FACULTY MEMBERS:	2
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY:	NONE
VOLUNTEERS INCHARGE:	ARJUN VM, ESTHER ALEXANDER, VISHNU M, AINEL MARY		



PONTALIR- A GOLDEN BUD



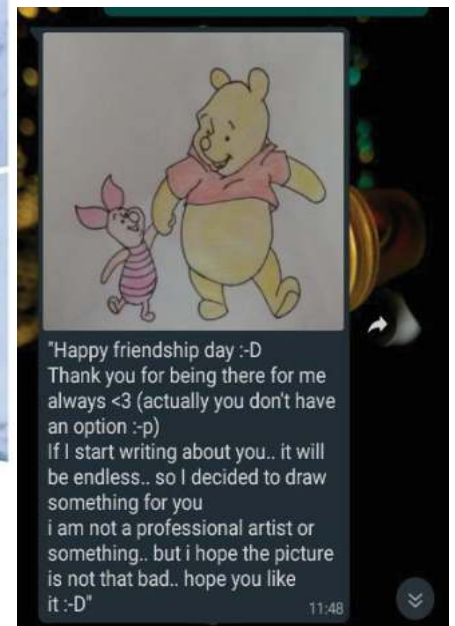
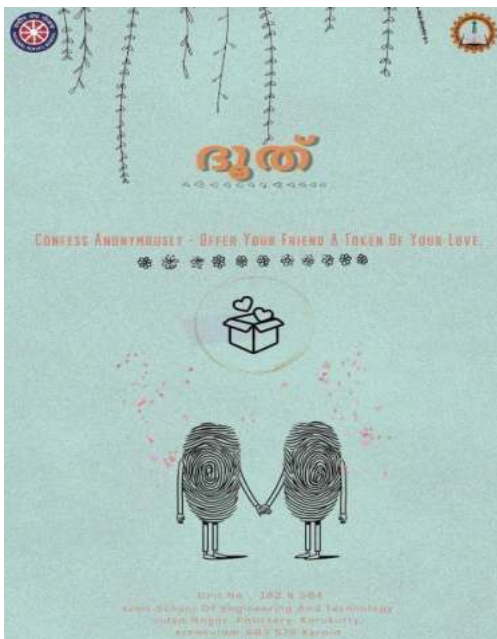
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DATE: 02/08/2020 TIME: 10:00 to 12:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	DHOOTH		
NUMBER OF STUDENTS:	148	NUMBER OF FACULTY MEMBERS:	NIL
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY:	NONE
VOLUNTEERS INCHARGE:	SHILPA JOSEPH, ANAKH VALSAN		



DHOOTH



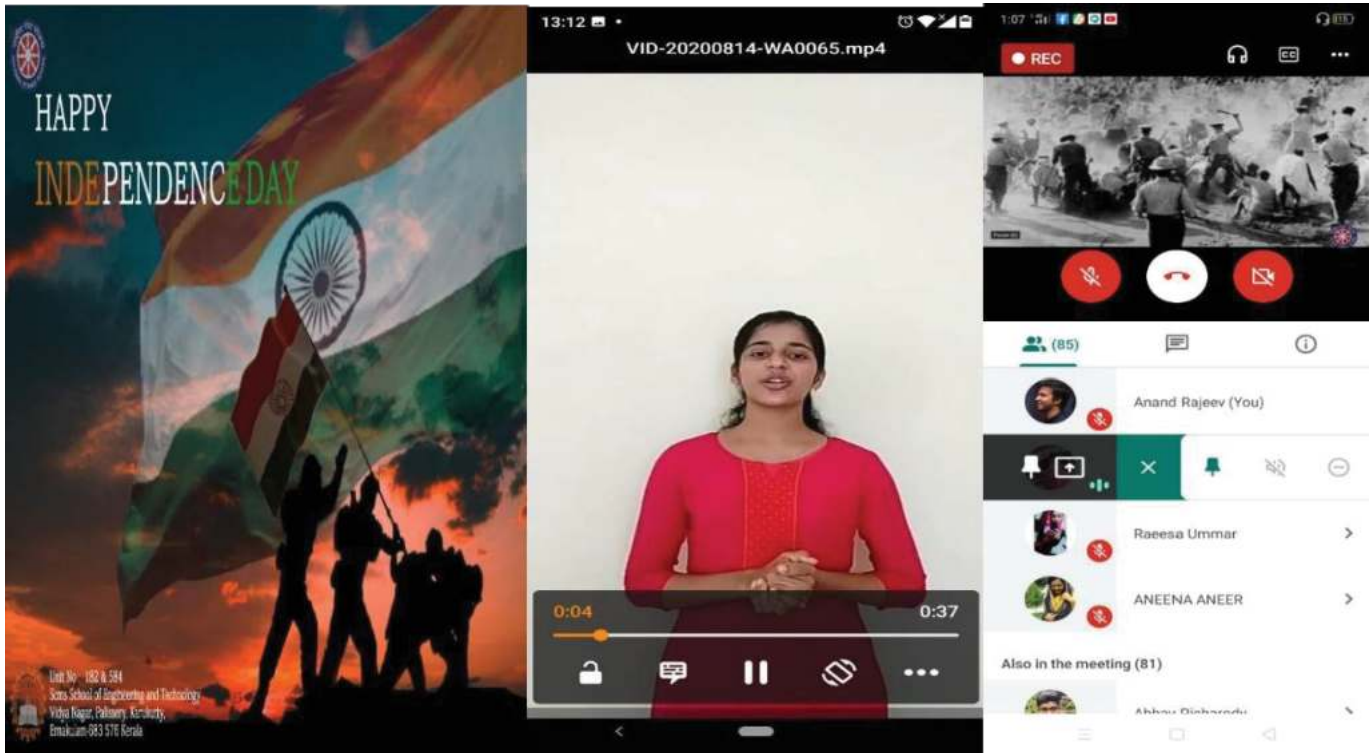
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DATE:15/08/2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	INDEPENDENCE DAY CELEBRATION		
NUMBER OF STUDENTS:	148	NUMBER OF FACULTY MEMBERS:	2
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY:	NONE
VOLUNTEERS INCHARGE:	ARJUN MOHAN, THOMAS SHAJI, NIVYA ANTONY		



INDEPENDENCE DAY CELEBRATION

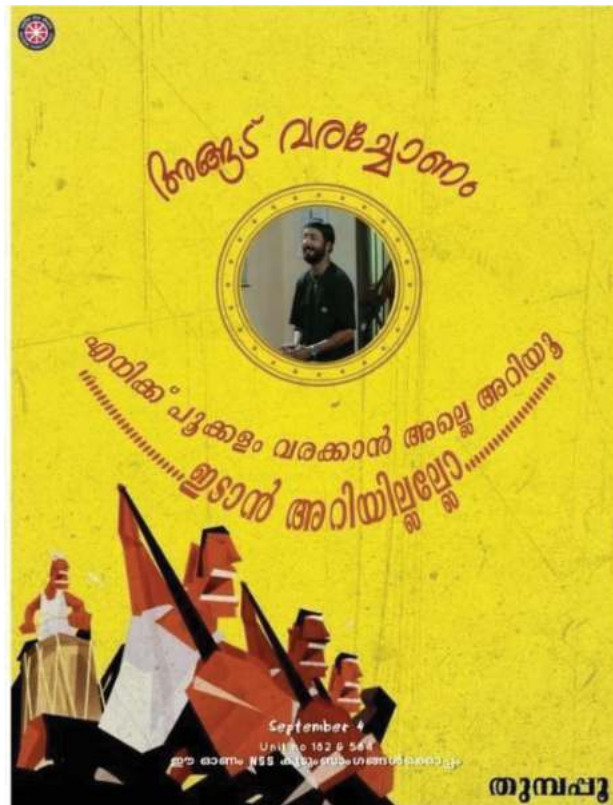
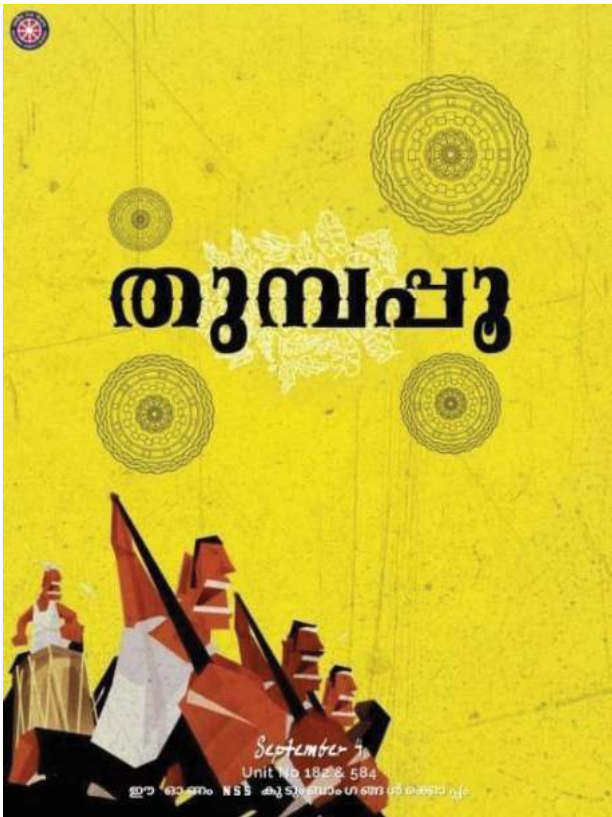


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DATE:02/09/2020 TIME: 10:00 to 15:00 VENUE:ONLINE			
TITLE OF ACTIVITY:	THUMBAPOO - ONAM CELEBRATION		
NUMBER OF STUDENTS:	148	NUMBER OF FACULTY MEMBERS :	3
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY:	NONE
VOLUNTEERS INCHARGE:	ANAKH VALSAN, ARJUN MOHAN, RAESSA UMMAR. NIVYA ANTONY, ARYAN C RAJAN, THOMAS SHAJI, ANUPAMA JYOTHIS, MEGHNA RAVIKUMAR		



THUMBAPOO - ONAM CELEBRATION



Prithu

PRINCIPAL
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DATE:05/09/2020 TIME: 10:00 to 13:00 VENUE:ONLINE			
TITLE OF ACTIVITY:	TEACHER'S DAY CELEBRATION		
NUMBER OF STUDENTS:	132	NUMBER OF FACULTY MEMBERS:	2
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ARYAN C RAJAN, THOMAS SHAJI		



TEACHER'S DAY CELEBRATION



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DATE: 16/09/2020 TIME: 13:00 to 15:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	OZONE DAY CELEBRATION		
NUMBER OF STUDENTS:	149	NUMBER OF FACULTY MEMBERS :	1
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	THOMAS SHAJI, RAESSA UMMAR, NIVYA ANTONY		



OZONE DAY CELEBRATION



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DATE: 20/09/ 2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	GENERAL ORIENTATION		
NUMBER OF STUDENTS:	159	NUMBER OF FACULTY MEMBERS :	3
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	RAESSA UMMAR, NIVYA ANTONY		

GENERAL ORIENTATION

NSS volunteers of SSET organized a general orientation on 20th September 2020, in which volunteers of units 182 and 584 collectively attended. The orientation class was taken by Mr. Arun M sir, Assistant Professor, Department of Computer Science Engineering, Ilahia College of Engineering and Technology. It was a very informative session in which he explained the importance of volunteers being together as a family. It was an interesting 2 hour-long session witnessing the active participation of all the volunteers.



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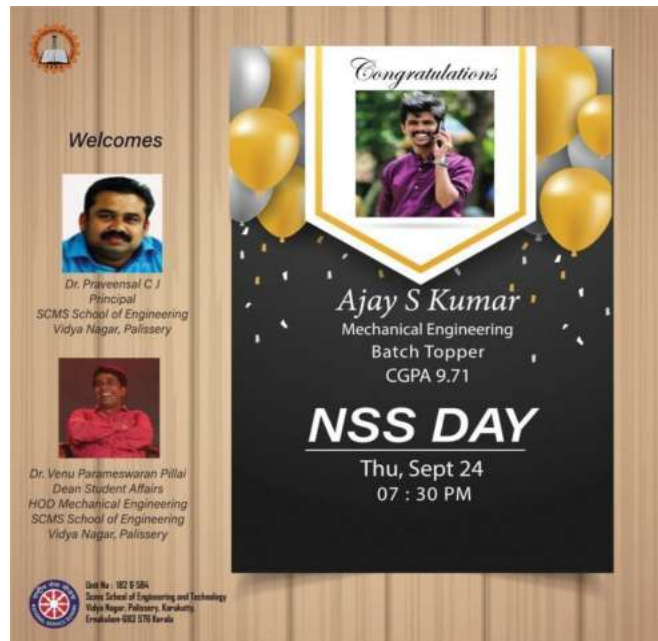
Vidya Nagar, Palissery, Karukutty, Kerala 683576

DATE:24/09/2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	NSS DAY CELEBRATION		
NUMBER OF STUDENTS:	149	NUMBER OF FACULTY MEMBERS :	4
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ANAKH VALSAN, ARJUN MOHAN		

NSS DAY CELEBRATION

On behalf of NSS DAY, volunteers of SSET organized an idea present program. Volunteers were asked to come up with innovative project ideas and the best ones out of them were selected for taking forward. The whole program was a collective brainstorming of ideas, and many innovative projects were proposed. Our program officers Sujay sir and Rakesh sir along with Praveensal sir, principal of SSET executed the selection process.

All volunteers actively participated and made the program a huge success.



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DATE:30/09/2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	RE-USE CHALLENGE		
NUMBER OF STUDENTS:	149	NUMBER OF FACULTY MEMBERS :	0
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ARYAN C RAJAN, ANAKH VALSAN		

RE-USE CHALLENGE

NSS volunteers of SSET organized a Reuse/Recycle challenge on 30th September 2020. Volunteers were asked to make something innovative from scrap/household materials, to devise a reuse potential for the same. And the outcome of the project was surprising, many innovative and useful products were made by the volunteers.



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DATE:02/10/2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	GANDHI JAYANTI		
NUMBER OF STUDENTS:	149	NUMBER OF FACULTY MEMBERS :	2
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ARJUN MOHAN, NIVYA ANTONY		

GANDHI JAYANTI



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DATE:29/10/2020 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	ONLINE GET-TOGETHER		
NUMBER OF STUDENTS:	115	NUMBER OF FACULTY MEMBERS :	2
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ARYAN C RAJAN, THOMAS SHAJI		

ONLINE GET-TOGETHER



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DATE:07/11/2020 TIME: 14:00 to 16:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	PRE RD ORIENTATION MEET		
NUMBER OF STUDENTS:	148	NUMBER OF FACULTY MEMBERS :	2
ORGANIZED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NONE
VOLUNTEERS INCHARGE:	ANAKH VALSAN, ARYAN C RAJAN		

PRE RD ORIENTATION MEET



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Activities conducted relevant to
Gender
Human Values
Professional Ethics
Environment and sustainability
2020-2021



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DATE: 14/08/2021 TIME: 10:00 to 12:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	SHADES OF INDIA @75		
NUMBER OF STUDENTS:	12	NUMBER OF FACULTY MEMBERS:	NIL
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	R NEERAJ, NAVYA GEORGE		

India@75
75 SHADES OF INDIA
DRAWING COMPETITION
SUBJECT : TRIBUTE TO FREEDOM FIGHTERS

Unit: 182 & 584
SCMS School of Engineering and Technology
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Ernakulam-683 576, Kerala



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DATE: 30/06/2021 TIME: 10:00 to 12:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	ORIENTATION PROGRAMME		
NUMBER OF STUDENTS:	137	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	RUSSEL KABEER, ARYA ANILKUMAR		



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DATE: 23/08/2021-25/08/2021 TIME: 17:00 to 20:00 VENUE: ONLINE			
TITLE OF ACTIVITY :	ONAPULARI-ONLINE PULARI		
NUMBER OF STUDENTS:	200	NUMBER OF FACULTY MEMBERS:	4
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	RUSSEL KABEER, ASWIN SURESH, MERLIN JOSEPH, ARYA ANILKUMAR, KALIDAS M, ASHWIN HARISHKUMAR, AKSHARA A S, BHAVYA PS, CHANDINI PS, GOVIND V MENON, NAVYA GEORGE		




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UNIT 182 & 584

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WINNERS SONG

1 Pooja R Menon S2 CSE

1 Thushar Sory Jy S2 ME

2 Devadath S2 CE

2 Soumya Sunil S2 CSE

3 Vishnu Valsan S2 ME

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UNIT 182 & 584

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UNIT 182 & 584

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7:22

ipc-icpu-jzz

Govind is presenting

D Deenda...

Sujay

N You

RAM 51 others



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DATE: 05/06/2021,06/06/2021,07/06/2021 TIME: 10:00 to 14:00 VENUE:ONLINE			
TITLE OF ACTIVITY :		DHARITHRI (ധരിത്രി)	
NUMBER OF STUDENTS :	205	NUMBER OF FACULTY MEMBERS:	3
ORGANISED BY :	NSS UNIT SSET	COLLABORATING AGENCY :	NIL
VOLUNTEERS INCHARGE:	ASWIN SURESH, MERLIN JOSEPH, KALIDAS M		

ധരിത്രി
പ്രകൃതി മഹോത്സവം
June 7th 7 pm
ON GOOGLE MEET
UNIT NO 182&584
SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY
VIDYA NAGAR,PALISSERY, KARUKUTTY,
ERNAKULAM 683 576 KERALA

ധരിത്രി
1. Pencil Drawing, Portrait, Etc
2. Debate
3. Mimiery
4. Extempore
5. Short Story And Poem Writing
6. Dance And Music Competition
7. Reels,photography
8. Musical Instruments
9. Plastic Recycling
10. Poster Making
Results Will Be Announced On June 6
ALL NSS VOLUNTEERS MUST PARTICIPATE IN ATLEAST ONE EVENT



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ധരിത്രി
CONGRATULATIONS

DEBATE



Adithya Hari
S2 CE - SSET



Gouthami
S2 CE -SSET




Surya Narayanan
S4 ME -SSET

UNIT NO 182&584

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CONGRATULATIONS

MIMICRY



Arjunan VM
SSET

UNIT NO 182&584

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CONGRATULATIONS

EXTEMPORE



Karen Mary Francis
S2 CE -SSET



Fathima Safna P
S2 CSE - SSET



Jahana Jabbar
S4 CSE - SSET

UNIT NO 182&584

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CONGRATULATIONS

SHORT STORY



Amalkrishna
S2 CE -SSET



Amrutha Vipin
S2 CSE -SSET



Roshith K V
S4 ME -SSET

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POEM



Gayathri S
S6 CSE -SSET



Bhavya P S
S4 CSE -SSET



Hamna Thaslina
S2 EEE -SSET



Lakshmi H
S2 CSE -SSET



Antony K Shaji
S4 CSE -SSET

UNIT NO 182&584

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CONGRATULATIONS

1/6

SONG



Thushar Shyju
S2 ME -SSET



Pooja R. Meilon
S2 CSE -SSET



Soumya Sunil
S2 CSE -SSET



Roshna K R
S2 CSE -SSET



Devadath Bijikumar
S2 CE -SSET

UNIT NO 182&584

CONGRATULATIONS

1/5

DANCE



Karthika Chandran
S2 CE -SSET



Benetta Ann Jacob
S2 CSE -SSET



Gopika Dimeshan
S4 CSE -SSET



Isha Krishna
S2 CSE -SSET

UNIT NO 182&584



Anitha

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Activities conducted relevant to
Gender
Human Values
Professional Ethics
Environment and sustainability
2022-2023



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Name of activity / programme	Introspection to insight: Life skill training
Date of activity/ programme	27/4/23
Time	10:30-11:30
Place	SSET
Chief Guest	Mr. Lathif Penath
No. of Participants	45

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES

INVITED TALK

on

INTROSPECTIONS TO INSIGHTS: LIFE SKILLS TRAINING

27 APRIL, 2023

10:30AM-11:30AM

Conference Hall(Admin Block)



Mr LATHIF PENATH
Assistant Professor
Dept. of Psychology
MES ASAMBI
Kodugallur



SSET SCMS School of
Engineering and Technology
Campus: Vidya Nagar, Karukutty, Ernakulam - 683576
Website: www.scmgroup.org/inst Tel: 0484 2382900/0484 2450330



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Name of activity / programme	Stock Market and Efficient Investment Opportunities for the Young- an Overview
Date of activity/ programme	15/7/2022
Time	11:00-1:00 pm
Place	SSET
Chief Guest	Prof. Cherian Varghese
No. of Participants	30

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



ATELIER

WORLD YOUTH SKILL DAY

Talk on

Stock Market and Efficient Investment Opportunities for the Young -An Overview



GUEST SPEAKER

Prof. Cherian Varghese

Professor & HoD

Finance Department

SCMS Cochin School of Business

Kochi

July 15, 2022

11:00AM-01:00PM

Conference Hall

Admin Block

Accredited by



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Name of activity / programme	Power of extracurriculars in unlocking opportunities
Date of activity/ programme	30/3/2023
Time	1:30-2:30
Place	SSET
Chief Guest	Nil
No. of Participants	45

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CAL TALKS

Power of Extracurriculars in Unlocking Opportunities

Arya Anil Kumar
(2019 - 2023 CSE)
Winner of One Campus One IAS Scholarship
National Integration Camp

30 March, 2023
1:30 pm - 2:30 pm

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Name of activity / programme	The role of effective communication in entrepreneurial success
Date of activity/ programme	6/3/23
Time	1:30-2:30 pm
Place	SSET
Chief Guest	Nil
No. of Participants	40

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CAL TALKS

The Role of Effective Communication in Entrepreneurial Success

Harikrishnan T P
(2019 - 2023)
Founder and Managing Director
Datahub Technologies R&D PVT LTD

6 March, 2023
1:00 pm - 2:00 pm

ATELIER - The Department Association of Basic Science and Humanities



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Name of activity / programme	Debate competition on World Television Day
Date of activity/ programme	21/11/22
Time	1:30-2:30 pm
Place	SSET
Chief Guest	Nil
No. of Participants	36



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Name of activity / programme	World Health Day
Date of activity/ programme	7/4/2023
Time	9:00-12:30 pm
Place	SSET
Chief Guest	
No. of Participants	25



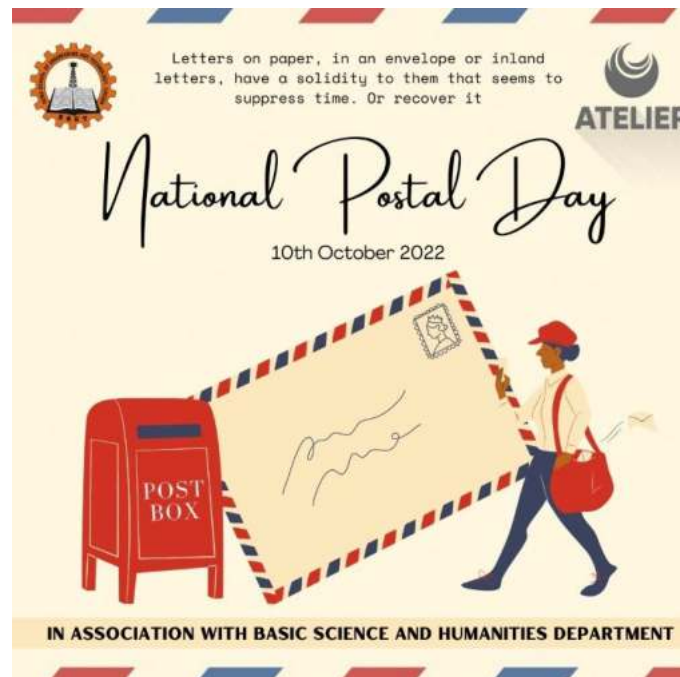
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Name of activity / programme	National Postal day
Date of activity/ programme	10/10/2022
Time	9:00-12:30 pm
Place	SSET
Chief Guest	
No. of Participants	30



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Name of activity / programme	Street play on Drug abuse and illicit trafficking
Date of activity/ programme	27/6/2022
Time	3:00-4:00 pm
Place	SSET
Chief Guest	
No. of Participants	30



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Date: 12\10\2023-13/10/2023 TIME: 10:00 to 12:00 VENUE:ONLINE			
TITLE OF ACTIVITY :	BIS CLUB INTRODUCTION AND AWARENESS CAMPAIGN		
NUMBER OF STUDENTS:	14	NUMBER OF FACULTY MEMBERS:	2
ORGANISED BY:	NSS UNIT SSET	COLLABORATING AGENCY :	BUREAU OF INDIAN STANDARDS
VOLUNTEERS INCHARGE:	MEERA M. PILLAI		



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