SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

Vidya Nagar, Palissery, Karukutty, Kerala 683576

CRITERIA 1

CURRICULAR ASPECTS

1.2: Academic Flexibility

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1.2.1/1.2.2 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc.

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BROCHURE

AND

COURSE PLAN

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Add on /Certificate/Value added programs and Online MOOC programs like NPTEL, Swayam

2020-21

Sl. No	Name of the Add on /Certificate/Value added programs and Online MOOC programs like NPTEL, Swayam	Course code
1	JAVA programming language	CJL2021S01
2	CATIA for Engineers	CCE2021S02
3	Health and Wellness	CHW2021S03
4	Analysis, Design and Detailing of RCC Structures	CAS2021S04
5	Analysis and Design of pavements	CAP2021S05
6	ARDUINO and TINKERCAD	CAT2021S06
7	System Modelling and Control Methods	CSM2021S07
8	C programming language 1.0	CCL2021S08
9	Sustainable Product Design and Development	CSD2021S09
10	Engineer's Evolution: Personal and Professional Growth	CEG2021S10
11	Geotechnical Engineering I	NPT2021S01

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ADD ON COURSE

ON

JAVA - Programming Language

CONDUCTED BY

Department of Computer Science and Engineering

Forenoon session: 9:00 am-12:00pm (3 hours)

Afternoon session: 12:30 pm - 3:30 pm (3 hours)

Course Date:

29th March to 02nd April, 2021

Total: 30 hours (6 hours per day)

Java Programming

Course Duration: 30 hours

Course Coordinator: Ms. Sindhya K Nambiar

Course Description

A five day Java Programming Language add on course was organised for S8 CS students by HackElite - Technical club of Department of Computer Science and Engineering from 29/03/2021 to 02/04/2021 in online mode.

Course Objectives

- To learn why Java is useful for the design of desktop and web applications.
- To learn how to implement object-oriented designs with Java.
- To identify Java language components and how they work together in applications.
- To design and program stand-alone Java applications.

Course Outcomes

After completing the course, students will be able to:

- Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
- Read and make elementary modifications to Java programs that solve real-world problems.

Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

Syllabus

Module 1 (6 hrs)

Introduction

Class Fundamentals , Object & Object reference , Object Life time & Garbage Collection, Creating and Operating Objects , Constructor & initialization code block, Access Control, Modifiers, methods Nested , Inner Class &Anonymous Classes

,Abstract Class & Interfaces Defining Methods, Argument Passing Mechanism , MethodOverloading, Recursion, Dealing with Static Members.

Module 2 (6 hrs)

Use and Benefits of Inheritance in OOP, Types of Inheritance in Java, Inheriting Data members and Methods , Role of Constructors in inheritance , Overriding Super Class Methods ,Use of "super" , Polymorphism in inheritance ,Type Compatibility andConversion Implementing interfaces.

Module 3 (6 hrs)

Organizing Classes and Interfaces in Packages , Package as Access Protection , Defining Package, Making JAR Files for Library Packages Import and Static Designing GraphicalUser Interfaces in Java, Components and Containers, Basics of Components, TheCollection Framework : Collections of Objects , Collection Types, Sets , Sequence, Map, Understanding Hashing, Use of ArrayList & Vector.

Module 4 (6 hrs)

The Idea behind Exception ,Exceptions & Errors ,Types of Exception ,ControlFlow In Exceptions, JVM reaction to Exceptions ,Use of try, catch, finally, throw, throwsin Exception Handling ,In-built and User Defined Exceptions, Checked and Un-CheckedExceptions.

Understanding Threads, Needs of Multi-Threaded Programming, Thread Life-Cycle, Thread Priorities, Synchronizing Threads, Inter Communication of Threads, Critical Factor in Thread – Deadlock

Module 5 (6 hrs)

Web Application Basics, Architecture and challenges of Web Application, Introduction to servlet, Servlet life cycle, developing and Deploying Servlets, ExploringDeployment, Descriptor (web.xml), Handling Request and Response.

Course Coordinator HOD Principal

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ADD ON COURSE

ON

CATIA FOR ENGINEERS

CONDUCTED OY

DEPARTMENT OF AUTOMOBILE ENGINEERING

Forenoon session: 9:00 am-12:00pm (3 hours)

Afternoon session: 1:00 pm - 4:00 pm (3 hours)

Total: 30 hours (6 hours per day)

Course Dates:

11/4/2021,12/4/2021,13/4/2021,14/4/2021,15/4/2021

Add on course on Catia

Course duration: 30 hours

Course Coordinator: Sujay K

Course Description

This course is to give a basic knowledge and understanding about computer aided designing before finalizing a design. This course will be helpful for students to acquire basic knowledge about Catia design software.

Course Objectives

- To provide working knowledge on CAD
- To train a solid modeling and assembly modeling software
- To train 3 D modeling using Catia

Course Outcomes

After completing the course, students will be able to:

- Gain working knowledge in CAD
- Gain knowledge in design problems using Catia.
- Gain knowledge to interpret design

Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

Syllabus

Module 1

Introduction to CAD basics

Module 2

2D Sketch Drawing

Module 3

3D part Drawing

Module 4

Assembly Drawing

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Course Coordinator HOD Principal

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VALUE ADDED COURSE

ON

HEALTH AND WELLNESS

CONDUCTED BY

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates:
8/2/21, 15/2/21, 22/2/21, 8/3/21, 15/3/21, 22/3/21, 23/3/21

HEALTH AND WELLNESS

Course duration: 30 hours

Course Coordinator: Ms. Surya K. A

Course Description

Health education and health promotion builds on a social and cultural understanding of health and illness within your community. The approach to health education used in this study session aims to improve access to health-related information, knowledge and services that will give people more control over their own health and wellbeing.

Course Objectives

1. To help understand the importance of a healthy lifestyle
2. To familiarize students about physical and mental health
3. To create awareness of various life style related diseases
4. To provide understanding of stress management

Course Outcomes

After completing the course, students will be able to:

1. Students will be able increase self-awareness, self-care and well-being.
2. Students will be able to demonstrate an understanding of one's health issues/conditions, including prevention approaches, self-care practices, and appropriate intervention and treatment when needed.
3. Students will be able to describe Health & Wellness programs and services offered, how to access them,and their value to their well-being

Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

Syllabus

Module 1 INTRODUCTION TO HEALTH & WELLNESS (**8 hrs)**

- Define and differentiate health and wellness.
- Importance of health and wellness Education.
- Local, demographic, societal issues and factors affecting health and wellness.
- Diet and nutrition for health & wellness.
- Essential components of balanced diet for healthy living with specific reference to the role ofcarbohydrates, proteins, fats, vitamins & minerals.

Module 2: FACTORS AFFECTING HEALTH **(8 hrs)**

- Malnutrition, under nutrition and over nutrition.
- Processed foods and unhealthy eating habits.
- Body systems and common diseases.
- Sedentary lifestyle and its risk of disease

Module 3 Factors affecting mental health **(6 hrs)**

- Stress, anxiety, and depression.
- Identification of suicidal tendencies
- Substance abuse (Drugs, Cigarette, Alcohol), de-addiction, counselling and rehabilitation

Module 4 MANAGEMENT OF HEALTH AND WELLNESS. **(8 hrs)**

- Healthy foods for prevention and progression of Cancer, Hypertension, Cardiovascular, andmetabolic diseases (Obesity, Diabetes, Polycystic Ovarian Syndrome).
- Types of Physical Fitness and its Health benefits
- Modern lifestyle and hypo-kinetic diseases; prevention and management through exercise
- Spirituality and mental health.
- Role of Yoga, asana and meditation in maintaining health and wellness.
- Role of sleep in maintenance of physical and mental health

SUGGESTED BOOKS:

- Physical Activity and Health by Claude Bouchard, Steven N. Blair, William L. Haskell.
- Mental Health Workbook by Emily Attached & Marzia Fernandez, 2021.
- Lifestyle Diseases: Lifestyle Disease Management, by C. Nyambichu & Jeff Lumiri, 2018.

SURYA K A
Course Coordinator

Dr Sreelekha Menon
HOD

Dr Praveen Sal C J
Principal

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ADD ON COURSE

ON

Analysis, Design and Detailing of RCC Structure

CONDUCTED BY

DEPARTMENT OF CIVIL ENGINEERING

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates:
3/8/2020,4/8/2020,5/8/2020,6/8/2020,7/8/2020

Analysis, Design and Detailing of RCC Structures

Course duration: 30 hours

Course Coordinator: Deeraj A D

Course Description

Importance of planning, Analysis and design and detailing

Modelling building geometry in ETABS software, applying loads and analysis and Design of Beam and column using ETABS

Design of isolated footing manually and preparing the detailing in AutoCAD

Preliminary Selection of foundation and Bearing capacity calculation

Course Objectives

- To impart knowledge about planning, design and Detailing of RCC structures
- To model building geometry in ETABS software, applying loads and analysis and Design of Beam and column using ETABS
- To design of isolated footing manually and preparing the detailing in AutoCAD
- To study about preliminary Selection of foundation and Bearing capacity calculation

Course Outcomes

After completing the course, students will be able to:

- plan, design and detail RCC structures
- model building geometry in ETABS software
- design isolated footing manually and prepare the detailing in AutoCAD

Syllabus

Module 1 (6 hours)

Planning, manual designing and Detailing of RCC Structures

Module 2 (6 hours)

Modeling and analysis of RCC structures using ETABS software

Module 3 (6 hours)

Design of isolated footing manually and preparing the detailing in AutoCAD

Module 4 (6 hours)

Preliminary Selection of foundation and Bearing capacity calculation

Module 5 (6 hours)

Detailed Selection of foundation and Bearing capacity calculation

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Assessment Pattern

Assignment – 30 marks
Examination – 50 marks
Viva – 20 marks

Course Coordinator | HOD | Principal

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ADD ON COURSE

ON

Analysis and Design of pavements

CONDUCTED BY

DEPARTMENT OF CIVIL ENGINEERING

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates:
12/10/2020,13/10/2020,14/10/2020,15/10/2020,16/10/2020

Analysis and Design of pavements

Course duration: 30 hours

Course Coordinator: Y K REMYA

Course Description

Types of pavements and comparison of flexible and rigid pavements

Construction of flexible pavements and rigid pavements using MORTH specifications

Manual Analysis methods for analyzing flexible and rigid pavements

Software tools for analysis for pavements

Design of flexible and rigid pavements

Course Objectives

- To give an idea about different types of pavements and comparison of flexible and rigid pavements
- To demonstrate the construction of flexible and rigid pavements
- To analyze flexible and rigid pavements by manual methods
- To introduce various software tools for analyzing pavements
- To Design flexible pavements using IRC method

Course Outcomes

After completing the course, students will be able to:

- To analyze flexible and rigid pavements for different traffic conditions
- model flexible and rigid pavements in ABAQUS software
- design flexible and rigid pavements using IRC codes

Syllabus

Module 1 (6 hours)

Types of pavements and comparison of flexible and rigid pavements

Module 2 (6 hours)

Construction of flexible pavements and rigid pavements using MORTH specifications

Module 3 (6 hours)

Manual Analysis methods for analyzing flexible and rigid pavements

Module 4 (6 hours)

Software tools for analysis for pavements

Module 5 (6 hours)

Design of flexible and rigid pavements

Assessment Pattern

Assignment – 30 marks

Examination – 50 marks

Viva – 20 marks

Course Coordinator

HOD

Principal

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ADD ON COURSE

ON

ARDUINO and TINKERCAD

CONDUCTED BY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates:
10/5/2021,11/5/2021,12/5/2021,13/5/2021,14/5/2021

ARDUINO and TINKERCAD

COURSE PERIOD: 30 Hours

Course Content:

- Basics of electronics, Electronic Components
- How to prototype circuits with a breadboard
- Arduino programming language and IDE
  Program Basic Arduino examples
- Prototype circuits and connections to the Arduino
- Programming the Arduino microcontroller
- Connecting the Arduino microcontroller to a serial terminal to understand communication and stand-alone use

Benefits:

At the end of this course, you will be able to create awareness about the

- Basic electronic concepts, breadboard and electronic components
- How Arduino platform works in terms of the physical board and libraries and theIDE
- To develop skills to design and implement various smart system applications.

Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

ARDUINO and TINKERCAD

Course duration: 30 hours

Course Coordinator: Ms. Parvathi R

Course Description

The contents of this course was designed to meet the gap in syllabus for the subject ECT 342 Embedded Systems.

Program Schedule

Date	Session	Topic	Resource person
10.5.21	9:00 am-12:00 pm	Introduction to MC & Arduino board- PR	Mr. Vinoj P.G (Asst. Prof, ECE), Ms. Parvathi R (Asst. Prof, ECE)
	12.30 pm-3:30 pm	Arduino Programming	Mr. Vinoj P.G (Asst. Prof, ECE)
11.5.21	9:00 am-12:00 pm	Interfacing with Arduino	Dr. Parvathy M (Assoc. Prof, ECE)
	12.30 pm-3:30 pm	RF Transceiver- TSA	Ms. Srilekshmi M (Asst. Prof, ECE)

12.5.21	9:00 am-12:00 pm	Motor Control Interfacing	Ms. Tini Susan Abraham (Asst. Prof, ECE)
	12.30 pm-3:30 pm	IR Sensors	Mr. Vinoj P.G (Asst. Prof, ECE)
13.5.21	9:00 am-12:00 pm	Interfacing Arduino with TINKERCAD- VPG, PR, SM	Ms. Parvathi R (Asst. Prof, ECE)
	12.30 pm-3:30 pm	Motor Control interfacing in TINKERCAD- PM	Ms. Parvathi R (Asst. Prof, ECE)
14.5.21	9:00 am-12:00 pm	Arduino Projects	Mr. Vinoj P.G (Asst. Prof, ECE)
	12.30 pm-3:30 pm		

Coordinator

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ADD ON COURSE

ON

System Modelling and Control Methods

CONDUCTED BY

DEPARTMENT OF ELECTRICAL ENGINEERING

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates:
13/7/2020,14/7/2020,15/7/2020,16/7/2020,17/7/2020

System Modelling and Control Methods

Course duration: 30 hours

Course Coordinator: Jayalakshmi.S

Course Description

An add on course titled System modeling and Control methods for a duration of 30 hours is conducted for S7,S5 and S3 students

Course Objectives

- Smart power flow and control methods
- Guidance and navigation control
- System modelling

Course Outcomes

After completing the course, students will be able to:

- Develop any control system using modelling
- Understand the concepts of guidance and navigation control

Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

Syllabus

Module 1 (6 hours)

Introduction, Class Mechanics, Introduction to Modeling, Guidance and navigation control

Module 2 (6 hours)

System model representation, Mechanical Systems

Module 3 ((6 hours)

System model representation, Electrical Systems

Module 4 (6 hours)

System Response, Introduction to feedback

Module 5 ((6 hours)

Smart power flow and control methods, A novel control methods for DC-DC converters

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Course Coordinator | HOD | Principal

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ADD ON COURSE

ON

C-Programming Language 1.0

CONDUCTED BY

Department of Computer Science and Engineering

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates: 5/4/2021, 6/4/2021, 7/4/2021, 8/4/2021, 9/4/2021

Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

C-Programming language 1.0

Course duration: 30 hours

Course Coordinator: Gayatri S Warrier

Course Description

This coursewas conducted from 05th to 09th April 2021.

Course Objectives

- To obtain programming skill development.
- To get introduced to concept of functions in C
- To attain the knowledge of various applications of C language in industry.

Course Outcomes

After completing the course, students will be able to:

- To solve the given problems using C language
- Design codes using functions in C
- They got familiarized with various applications in real life and industry.

Syllabus

Module 1 (6 hrs)

- Defining Structure and Data Types
- Storage Classes
- Input/output Statements
- Operators and Expressions

Module 2 (6 hrs)

- Decision making and Looping
- Arrays

Module 3 (6 hrs)

- Strings
- Defining and Calling Functions

Module 4 (6 hrs)

- Pointers
- Dynamic Memory allocation

Module 5 (6 hrs)

- File handling functions

Course Coordinator HOD Principal

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DEPARTMENT OF MECHANICAL ENGINEERING

NOTICE

The Department of Mechanical Engineering is organising an **ADD-ON course** (online mode) for S6 Mechanical Engineering Students (2017 admission) on "Sustainable Product Design and Development" from 27th July to 01st Aug, 2020.

The contents of the course are as follows.

Introduction to sustainable development and engineering
Sustainability standards and sustainable development goals
Current ecological scenario
UNSDGs and its relevance
Biomimicry and product development
Life cycle assessment of a product
Sustainable materials
Product design and development
Role of IPR in product development, Environmental laws and disclosure regulations
Product development using waste material

The course will be of **30 hours** (6 hours for Days 1-4 and 3 hours for Days 5 and 6). A certificate will be provided to students who have successfully completed the course. No registration fee for the course.

Click on the below link for registration. **Register by 20th July 2020.**

Registration link - *https://forms.gle/mbCkZKYKstFGVeM9A*

Dr. Venu P
Head of the Department
Mechanical Engineering

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DEPARTMENT OF MECHANICAL ENGINEERING

ASSOCIATION OF MECHANICAL ENGINEERS FOR RESEARCH AND INNOVATION (ARiME)

ADD-ON COURSE – Sustainable Product Design and Development

The Department of Mechanical Engineering, SCMS School of Engineering and Technology conducted a six-day (30 hours) add-on course session on "Sustainable Product Design and Development" for the students of third year Mechanical Engineering (2017-21 batch) in the months of July-August 2020. The session was conducted online due to the Covid-19 pandemic situation.

Objective of the course –

With a burgeoning population and the ensuing drain on all resources on Earth, sustainability is quickly becoming more imperative than ever. Engineering with sustainability should therefore be improved the world over. This course emphasized what sustainability is, how we are using it now in the product design and how we may use it in the future products. It also highlighted how new entrepreneurs are wising up with new sustainable products and the different avenues for research within this vast field. The course aimed in creating motivational impetus in students and thereby developing interest and engaging them in life-long learning in the context of sustainable product design and development.

The course was identified to fill the gap in syllabus for the courses "BE103 Introduction to Sustainable Engineering" and "BE102 Design and Engineering" during the 1st and 2nd semesters of the B.Tech program.

Course contents and Schedule –

The six-day course was scheduled as follows:

Date and Day	Session	Topic
27 July 2020 Monday	Forenoon	Introduction to sustainable development and engineering
	Afternoon	Sustainable product design
28 July 2020 Tuesday	Forenoon	Design considerations – Part 1
	Afternoon	Design considerations – Part 2
29 July 2020 Wednesday	Forenoon	Biomimicry and product development
	Afternoon	Life cycle assessment of a product – a practical approach
30 July 2020 Thursday	Forenoon	Sustainable materials and manufacturing
	Afternoon	Product design and development – basic steps
31 July 2020 Friday	Forenoon	Role of IPR in product development Environmental laws and disclosure regulations
03 August 2020 Monday	Forenoon	Product development using waste material - discussion

Timings –

Forenoon session – 09:00 am – 12:00 pm (3 hours)

Afternoon session – 01:00 pm – 04:00 pm (3 hours)

Total – 30 hours (6 hours per day)

Venue – Google Meet (Online mode)

The course was handled by external resource person and internal faculty members. A great percentage of the sessions were handled by the faculty members of Mechanical Engineering, SSET the details of which are provided. Minimum criteria for certification were combined marks of attendance with submission and presentation of the assignment. The assignment composed of demonstrating the working model of a mechanism made by waste materials and presenting the same. 98 students out of 108 registered students (90.5%) completed the course successfully and e-certificates were handled over. List of registered students and certified students are attached separately. Sample certificate is also attached.

Resource person / faculty handled the sessions –

Session	Topic	Resource person / faculty
1	Introduction to sustainable development and engineering	Mr. Anup Kumar, MED, SSET
2	Sustainable product design	Mr. Sanju A C, MED, SSET
3	Design considerations – Part 1	Mr. Sajith E, MED, SSET
4	Design considerations – Part 2	Mr. Anup Kumar, MED, SSET
5	Biomimicry and product development	Dr. Rag R L, HOD, MED, St. Thomas Institute for Science and Technology, Trivandrum
6	Life cycle assessment of a product	Mr. Anup Kumar, MED, SSET
7	Sustainable materials and manufacturing	Mr. Jenson Joseph, MED, SSET Mr. Dhanesh S, MED, SSET
8	Product design and development – basic steps	Mr. Sanju A C, MED, SSET
9	Role of IPR in product development Environmental laws and disclosure regulations	Ms. Anjana Girish, Asst. Prof., Inter University Centre for Intellectual Property Rights, CUSAT Ms. Safy Abraham, CED, SSET
10	Product development using waste material - discussion	Dr. Venu P, HOD, MED, SSET Mr. Anup Kumar, MED, SSET

Contents covered (an overview) –

Day 1 (FN session) - Introduction to sustainable development and engineering - Sustainability and sustainable engineering, 3 pillars of sustainable product development, UNSDGs

Day 1 (AN session) - Sustainable product design - New product design and sustainable new product design, Steps in product design, Golden rules for sustainable product design, Sustainability Dynamics Model

Day 2 (FN session) - Design considerations - Design for Functionality and Usability of a product

Day 2 (AN session) - Design considerations - Design for Assembly, Disassembly, Maintenance, Consideration for reuse, recycling and remanufacturing

Day 3 (FN session) - Biomimicry and product development - Innovations inspired from nature, Bio-inspired technology

Day 3 (AN session) - Life cycle assessment - Scope and goal, Conducting LCA of a product, Methods for increasing energy efficiency

Day 4 (FN session) - Sustainable materials and sustainable manufacturing – Properties, applications, methods of production

Day 4 (AN session) - Role of IPR in product development - Industrial design, copyright, patents, criteria for patentability

Day 5 (FN session) - Environmental laws and disclosure regulations - Environment acts and protocols, Environmental legislations for product development

Day 6 (FN session) - Product development using waste material - An activity was given to the students to construct a working model of Tomlinson surface meter using waste materials available at their home and present the same. The core intension was to observe the type of waste materials produced at their homes and how they can utilize these materials to develop something useful. Moreover, the presentation on the working of model would add on to their communication skills.

A student's feedback was taken on the training program at the end of the last day, the overview is shown below. The feedback on the workshop was taken from all the registered students, out of which 68 responded.

Faculty coordinator

Dr. Venu P
HOD, MED

Value added course on

Engineer's Evolution: Personal and Professional Growth

CONDUCTED BY

BASIC SCIENCES AND HUMANITIES DEPARTMENT AND PLACEMENT CELL

SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY

VIDYA NAGAR, KARUKUTTY, KERALA - 683576

Forenoon session: 9:00 am-12:00pm (3 hours)
Afternoon session: 1:00 pm - 4:00 pm (3 hours)
Total: 30 hours (6 hours per day)

Course Dates:
4/9/20, 16/9/20, 18/9/20, 21/9/20, 23/9/20,24/9/20

Engineer's Evolution: Personal and Professional Growth

Course Objectives

- To enhance self-awareness and adaptability as they relate to engineering career goals.
- To foster innovation and creativity in engineering problem-solving
- To create a personal and professional development plan for ongoing growth

Course Outcomes

After completing the course, students will be able to

- Develop leadership and teamwork skills within engineering contexts
- Navigate ethical challenges and make principled decisions in engineering practice
- Understand the importance of lifelong learning and professional development in engineering.

Syllabus

Module 1 – 6 hours

Introduction to Engineer's Evolution - The evolving role of engineers in society, The importance of personal and professional growth in engineering.

Module 2 – 6 hours

Self-Awareness and Adaptability - Understanding personal strengths and weaknesses, Embracing change and adaptability in engineering

Module 3 – 6 hours

Innovation and Creativity in Engineering- The role of innovation in engineering, Creativity techniques for problem-solving, Engineering innovation in real-world applications

Module 4 – 6 hours

Life long Learning Personality development – The importance of continuous learning in engineering, Professional development opportunities and resources, Building a professional network in engineering

Module 5 – 6 hours

Career Planning and Goal Setting – Resume building and interview skills– Mock Interviews

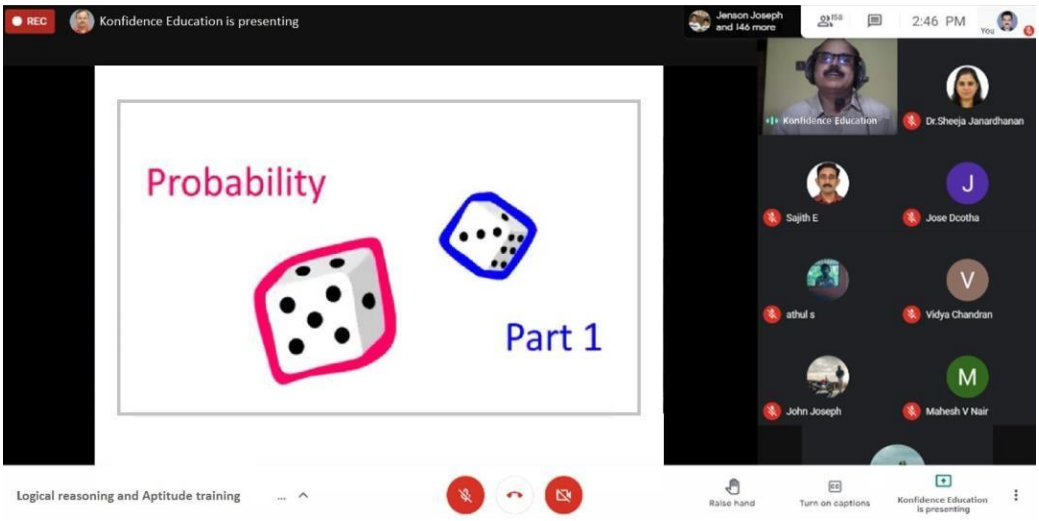
Assessment Pattern

Two assignments of 15 marks each

Final Assessment exam -50 marks, passed with a minimum of 20 marks
Viva-20 marks

Certificates will be awarded to students who completed the course with a minimum of 40 marks (total score) and a minimum of 20 marks in final exam. Minimum 75% attendance is mandatory to get the certificate.

Course summary



Screenshot of the value added course on Engineer's Evolution: Personal and Professional Growth (30 hours)

The value added course was organized by Basic Sciences and Humanities department and Placement cell on 14/9/20, 16/9/20, 18/9/20, 21/9/20, 23/9/20 and 24/9/20 and 229 of students successfully completed the course.

Course Coordinator HOD Principal

SCMS SCHOOL OF ENGINEERING & TECHNOLOGY
KARUKUTTY
ERNAKULAM
683 576

PRINCIPAL
SCMS SCHOOL OF ENGINEERING & TECHNOLOGY
VIDYANAGAR, PALLISSERY, KARUKUTTY
ERNAKULAM, KERALA-683 576

GEOTECHNICAL ENGINEERING- 1

PROF. DEVENDRA NARAIN SINGH
Department of Civil Engineering
IIT Bombay

PRE-REQUISITES : Engineering Geology

INTENDED AUDIENCE : Civil Engineering

INDUSTRIES APPLICABLE TO : All companies that deal with the Civil infrastructure development

COURSE OUTLINE :

Geotechnical Engineering-1 deals with the fundamental aspects of soil starting from its origin to various engineering applications. The course discusses the basic classification, characterization, hydraulic and mechanical properties of soils in depth. The expected outcome of the course is to make the students familiarize with soil and to showcase its behavior during various engineering applications such as foundation, retaining wall etc.

ABOUT INSTRUCTOR :

Prof. Devendra Narain Singh is an Institute Chair Professor in Department of Civil Engineering at Indian Institute of Technology Bombay. He obtained his Bachelors, Masters and Ph. D degrees from Indian Institute of Technology Kanpur. His research focuses are geomaterial characterization, contaminant-geomaterial interaction, sensors for soil moisture measurement, modelling of heat migration through soils, utilization of industrial by-products, municipal solid waste management and other fields associated with Environmental Geotechnics. He guided 36 Ph. Ds and 35 Master students and several are on-going. He is the editor-in-chief for the journal Environmental Geotechnics, ICE (UK).

COURSE PLAN :

Week 1**:** Origin of Soils and Rocks, Rock cycle

Week 2**:** Basic relationships, Index properties of aggregates

Week 3**:** Soil structure, Soil classification

Week 4**:** Soil compaction

Week 5**:** Soil-water Statics

Week 6**:** Flow through soils, Quick sand condition

Week 7**:** Permeability and methods for its determination

Week 8**:** Flow-nets, Stresses in soil from surface loads

Week 9**:** Boussinesq theory

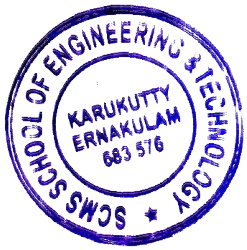
Week 10**:** New marks chart, Contact pressures

Week 11**:** Consolidation of soils

Week 12**:** Settlement of compressible soil layers

Assessment Pattern for certificate courses

A learner will pass and be certified only if Average assignment score (out of 100) >= 40 AND Final exam score (out of 100) >= 40.



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