

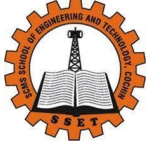
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CRITERIA 1

CURRICULAR ASPECTS

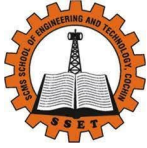
1.2: Academic Flexibility



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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**



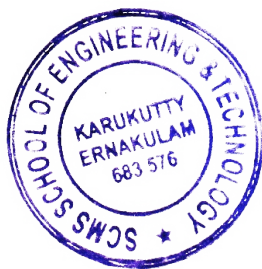
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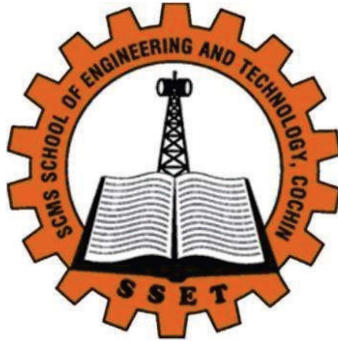
Add on /Certificate/Value added programs and Online MOOC programs like NPTEL, Swayam

2019-20

Sl. No	Name of the Add on /Certificate/Value added programs and Online MOOC programs like NPTEL, Swayam	Course code
1	Introduction to swarm robotics	CIR1920S01
2	Get introduced with flavours of programming with C++	CGC1920S02
3	Software Engineering using Agile method	CSM1920S03
4	Blockchain enabling revolution	CBR1920S04
5	Plastic Waste Management	NPT1920S01




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Add on course

ON

Introduction to Swarm Robotics

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

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

Total: 30 hours (6 hours per day)

CONDUCTED BY

**DEPARTMENT OF ELECTRONICS & COMMUNICATION
ENGINEERING**

Course dates : 5/3/2020-9/3/2020

ELIGIBILITY: U.G STUDENTS

COURSE PERIOD: 30 Hours

Syllabus

Introduction to Fritzing

Introduction to Robotics

MC and Arduino board programming

Interfacing with Arduino Motor control interfacing with Arduino

IR sensors interfacing with Arduino

RF interfacing with Arduino

Arduino projects carried out at SCMS Centre for Robotics ,SSET

Benefits:

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

- Overview of Swarm Robotics
- Design Arduino board
- Program Arduino Board
- Device control
- Sensor Interfacing
- Simulation using Tinkercad

Course outcome

- Understanding Swarm Intelligence, Interfacing Sensors, Wireless Communication and Arduino Programming
- Understanding Machine to Machine Communication
- Development of Autonomous Robots which send signals to communicate with each other
- Arduino Programming to receive signals from other Robots and behave accordingly
- Introduction to structure and programming of micro controllers
- Practical experience for participants with DC motors, Radio Frequency Modules, Micro controllers, Infrared Sensors, etc



Ms. Parvathi R

Course Coordinator



Dr. Saira Joseph

HOD



Dr. Praveensal C J

Principal



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.

Introduction to Swarm Robotics

Course duration: 30 hours

Course Coordinator: Ms. Parvathi R

Program Schedule

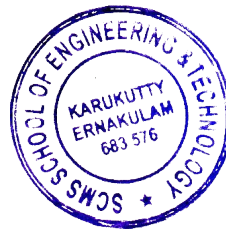
Date	Session	Topic	Resource person
05.03.20	9:00 am-12:00 pm	Introduction to Fritzing	Dr.Saira Joseph (HOD, ECE)
	1pm to 4pm	Introduction to Robotics	Mr. Vinoj P.G (Asst. Prof, ECE)
06.03.20	9:00 am-12:00 pm	MC and Arduino board programming	Dr. Parvathy M (Assoc. Prof, ECE), Mr. Vinoj P.G (Asst. Prof, ECE)
	1pm to 4pm	MC and Arduino board programming	Ms. Srilekshmi M (Asst. Prof, ECE), Ms. Parvathi R (Asst. Prof, ECE)

07.03.20	9:00 am-12:00 pm	Motor control Interfacing with Arduino	Ms. Parvathi R (Asst. Prof, ECE)
	1pm to 4pm	IR Sensors Interfacing Arduino	Mr. Vinoj P.G (Asst. Prof, ECE)
08.03.20	9:00 am-12:00 pm	RF interfacing with Aurdino	Tini Susan Abhraham (Asst. Prof, ECE)
	1pm to 4pm	Arduino Projects	Ms. Parvathi R (Asst. Prof, ECE)
09.03.20	9:00 am-12:00 pm	Arduino Projects	Mr. Vinoj P.G (Asst. Prof, ECE), Ms. Srilekshmi M (Asst. Prof, ECE),
	1pm to 4pm		

coordinator

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ADD ON COURSE

ON

**GET INTRODUCED WITH THE FLAVOURS
OF PROGRAMMING THROUGH C++**

CONDUCTED BY

Department of Computer Science and Engineering

13/1/2020-17/1/2020

Forenoon session:9am to 12pm(3hrs)

Afternoon session:1pm to 4pm(3hrs)

Total:30hrs(6hrs per day)

GET INTRODUCE WITH THE FLAVOURS OF PROGRAMMING THROUGH C++

Course duration: 30 hours

Course Coordinator: Ms.RoseBell

Course Description

A Course on GET INTRODUCE WITH THE FLAVOURS OF PROGRAMMING THROUGH C++ was organized by HackElite-Technical Club (Department of Computer Science and Engineering). This course was conducted from 13th to 17th January 2020.

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.

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: 13-01-2020 Monday

- Introduction of c++ program
 - How C++ differs from C , Variables Declaration
 - Optional Parameters
 - Reference Variables , Operator overloading
 - Basics of Console Input and Output
 - Constant Pointers
 - Dynamic Memory Allocation

MODULE 2: 14-01-2020 Tuesday

- How C++ differ from c
- Function overloading
- Basic of console input and output

MODULE 3: 15-01-2020 Wednesday

- Overview of OOPS Principles
- Introduction to classes & objects
- Creation & destruction of objects√Data Members

MODULE 4: 16-01-2020 Thursday

- Introduction and benefits.
- Access Specifier.
- Base and Derived class Constructors
- Types of Inheritance

MODULE 5: 17-01-2020 Friday

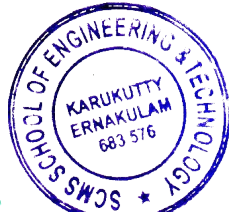

- Introduction to Exception.
- Benefits of Exception handling√
- Try and catch block.
- Throw statement. Pre-defined exceptions in C++.
- Writing custom Exception class.



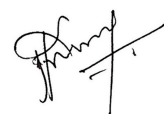
Coordinator



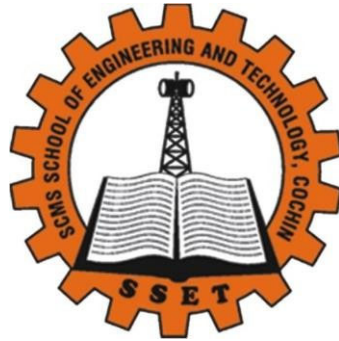
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ADD ON COURSE

ON

Software Engineering using Agile Method

CONDUCTED BY

Department of Computer Science and Engineering

19th to 23rd August, 2019

Forenoon session:9am to 12pm(3hrs)

Afternoon session:1pm to 4pm(3hrs)

Total:30hrs(6hrs per day)

Software Engineering using Agile Method.

Course duration: 30 hours

Course Coordinator: Ms. Arshey M

Course Description

A Course on Software Engineering using Agile Method was organized by HackElite-Technical Club (Department of Computer Science and Engineering).

Course Objectives

- 1) To demonstrate the ability to participate effectively in agile practices/process for software development.
- 2) To explain the purpose behind common agile practices.
- 3) To apply agile principles and values to a given situation.
- 4) To identify and address most common problems encountered in adopting agile methods.

Course Outcomes

After completing this course, you will be able to:

- 1) Demonstrate the ability to participate effectively in agile practices/process for software development.
- 2) Explain the purpose behind common agile practices.
- 3) Ability to apply agile principles and values to a given situation.
- 4) Ability to identify and address most common problems encountered in adopting agile methods.

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

Agile Fundamentals

In this module, we will learn about agile mindset, the core behind many agile methods. How agile methods are different than traditional methods and when to use agile methods.

Module 2

Requirements and Planning

In this module we will learn about user stories and agile estimation and planning techniques.

Module 3

Scrum

In this module we will learn about Scrum which is one of the most popular agile framework. We will learn about scrum practices and the purpose behind these practices.

Module 4

XP and Course Wrap-up

In this module, we will compare Scrum to XP and learn about some of the engineering practices from XP.

Module 5

To apply agile mindset and finally review different frameworks available to implement agile.

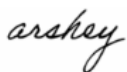
Assessment Pattern

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. A minimum of 75% attendance is mandatory for the course.


Coordinator


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ADD ON COURSE

ON

BLOCKCHAIN ENABLING REVOLUTION

CONDUCTED BY

Department of Computer Science and Engineering

27th August to 31st August, 2019

Forenoon session:9am to 12pm(3hrs)

Afternoon session:1pm to 4pm(3hrs)

Total:30hrs(6hrs per day)

BLOCKCHAIN ENABLING REVOLUTION

Course duration: 30 hours

Course Coordinator: Ms Arshey

Course Description

A Course on Blockchain Enabling Revolution was organized by Department of Computer Science and Engineering.

Course Objectives

- You'll learn the core structure and technical mechanisms of Bitcoin, Ethereum, Hyperledger, and Multichain Blockchain platforms
- To provide conceptual understanding of how blockchain technology
- Used to innovate and improve business processes.

Course Outcomes

After completing the course, students will be able to:

- Theoretical knowledge of the main concepts and properties of blockchain technologies.
- Acquaintance with white papers of different blockchain-based projects.
- Experience in analysis of practical cases of blockchain application.

Syllabus

MODULE 1 : 27-08-2019

- Introduction to Blockchain
- Introduction to cryptography & cryptocurrencies
- Digital Money
- Distributed Ledgers

MODULE 2 : 28-08-2019

- Blockchain Consensus: network models
- Requirements for the consensus protocols
- Consensus protocols for Permissioned Blockchains

MODULE 3 : 29-08-2019

- Hyperledger Fabric
- Benefits of Hyperledger Fabric
- Characteristics of Hyperledger Fabric
- Decomposing the consensus process

MODULE 4 : 30-08-2019

- Ethereum and decentralized applications
- Ethereum: Decentralized Apps, EVM, and the Ethereum blockchain
- Programming in solidity

MODULE 5 : 31-08-2019

- Scalability in Blockchain
- Payment channels and state channels
- Quiz and Assessment

Assessment Pattern

Two assignments of 15 marks each

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


Viva-20 marks

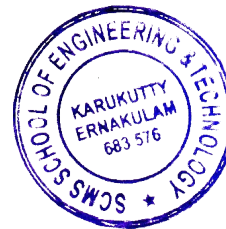
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Course Coordinator


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PLASTIC WASTE MANAGEMENT

PROF. BRAJESH KUMAR DUBEY

Department of Civil Engineering
IIT Kharagpur

PRE-REQUISITES : Basic Environmental Science, Basic Differential Equations, Basic Chemistry

INTENDED AUDIENCE : Civil and Chemical Engineering BTech programs, Environmental Engineering and Environmental Science Masters and Doctoral Programs

INDUSTRIES APPLICABLE TO : AECOM, Ramky, Environmental Resource Management (ERM), SENES/ARCADIS. Waste Management related companies, Govt. Agencies

COURSE OUTLINE :

This course will focus on:1. Introduction of Plastic pollution as a global problem today.2. What is Plastic Waste? The Magnitude of the problem on global scale and in Indian context. Plastic in Ocean and impact on sea life and economy.3. What is the nature and complexity of this problem and what could be the best way to manage the plastic waste and how to mitigate the risk from plastic waste.4. Plastic Waste Management Rules 2016, Recent Plastic Bans and the use of Extended Producer Responsibilities (EPR) concepts in managing Plastic waste in India.5. Best Practices of Managing Plastic Waste from around the World including use of Plastic waste in road (experience from Indian context and other countries)6. Way forward – how to manage this waste stream applying state of the art technologies

ABOUT INSTRUCTOR :

Prof. Brajesh Kr. Dubey has his bachelors degree in Civil Engineering (Hons) from Indian Institute of Technology (IIT) Kharagpur, India and PhD in Environmental Engineering Sciences, University of Florida, Gainesville, Florida, USA. He is presently Associate Professor (Integrated Waste Management and Sustainable Engineering) in the Division of Environmental Engineering and Management at Indian Institute of Technology (IIT), Kharagpur, India. Dr. Dubey has more than 17 years of research, teaching, training and industrial outreach experience in the areas of Integrated Solid and Hazardous Waste Management, and Sustainable Engineering and Application of Life Cycle Assessment techniques. He also works in the area of Life Cycle Analysis and Sustainable Engineering. He has been teaching courses in the area of Solid Waste Management, Hazardous Waste Management, Life Cycle Analysis and Environmental Risk Assessment among other courses for nearly a decade. He has taught at several universities in USA, Canada, New Zealand, China and India. He has also conducted training programs in the Integrated Waste Management areas including that for Electronics Waste. Dr. Dubey has authored/co- authored more than 200 publications in his area of expertise and have presented at several national and international conferences. He has worked as Waste Management Expert for UN agencies and World Bank.

COURSE PLAN :

Week 1: Plastics – What it is? Types, Uses and Global Statistics

Week 2: Plastic Waste – Sources, Production, Global and Indian Context

Week 3: Plastic Waste Management Rules 2016 (India) and Global Rules and Regulations

Week 4: Plastic Bans including China Sword Policy implication on global plastic waste management

Week 5: Impact of Plastics on Marine Life, Effect on Wildlife, Human Health and Environment

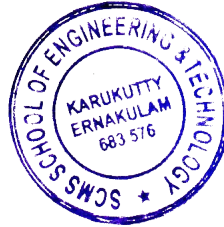
Week 6: Plastic Waste Management Practices – Use of Plastic waste in roads, issues and challenges

Week 7: Possible Alternate Materials to Plastics –Greener Alternatives

Week 8: Plastics Resource Recovery and Circular Economy.

Assessment Pattern for certificate courses

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



A handwritten signature in green ink, appearing to read "Anitha".

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