Swami Keshvanand Institute of Technology,
Management & Gramothan

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Affiliated to Rajasthan Technical University, Kota

1.2.2 Summary Sheet of Add-on Courses (Sample (Last Five Years))

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Summary Report Sample (2020-21)

Summary Report of CRT

CRT-

Campus Recruitment training (CRT) at is designed to aid candidates in their preparation for Recruitment through Campuses or outside campuses (i.e., On campus or off campus). Students in their final step of graduation and post-graduation looking for placement in reputed organizations can make use of this training to get trained to deliver their best in the selection processes of organizations.

Student Enrolled: 400 Student

Student Certified: 400 Student

Session: 2020-21

After completion of CRT students will be able to-

1. Understand organizational procedures and policies as related to how the employers process for campus recruitment and employer preferences
2. Use self-assessments to identify strengths, weaknesses, transferable skills, and prime marketable characteristics.
3. Organize and write an effective cover letter and Resume.
4. Exercise judgment and logical decision making in selecting from alternative techniques for Group Discussion & Interview.

Summary of Advanced Machining Processes Course

Session: 2020-21

There is a need for machine tools and processes which can accurately and easily machine the most difficult-to-machine materials and work pieces with intricate and accurate shapes. In order to meet these challenges, a number of newer material removal processes have now been developed to the level of commercial utilization. These newer methods are also called unconventional in the sense that conventional tools are not employed for metal cutting. Instead, energy in its direct form is used to remove the material from the work piece.

Student Enrolled: 40 Students

Certified: 18 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of latest technological developments and research trends in the field of unconventional / non-traditional / modern machining processes and will be able to apply the basic principles to analyse Advanced Machining Processes systems.

Summary of Software Engineering Course(noc20-cs68) 2020-21

Software Engineering: Large scale software development poses special challenges. This course targets to expose the students to the challenges of large scale software development and would expose the students as to how to overcome those. Starting with basic life cycle model concepts, it would discuss requirements specification, design, and testing issues.

Student Enrolled: 94

Student Certified: 27

Outcome of the Course:
Students will learn applications of Software development life cycle. They will be capable of applying their learning in huge application spaces . They will be able to work as an individual and as a component of a multidisciplinary group to create and convey quality software's. They will show a comprehension of and apply current speculations, models, and procedures that give a hat provide a basis for the software lifecycle. They will be able to Exhibit a capacity to utilize the procedures and devices essential for designing practice.

Summary of Introduction to algorithms and analysis NPTEL course (noc20-cs93)(2020-21)

Introduction to algorithms and analysis: An algorithm is the best way to represent the solution of a particular problem in a very simple and efficient way. If we have an algorithm for a specific problem, then we can implement it in any programming language. An efficient algorithm solves a problem in an efficient way using minimum time and space. Analysis of algorithm is the process of analyzing the problem-solving capability of the algorithm in terms of the time and size required. However, the main concern of analysis of algorithms is the required time or performance. If we require an algorithm to run in lesser time, we have to invest in more memory and if we require an algorithm to run with lesser memory, we need to have more time.

Student Enrolled: 82

Student Certified: 25

Outcome of the Course- This course will help to analyze the asymptotic performance of algorithms, write rigorous correctness proofs for algorithms, demonstrate a familiarity with major algorithms and data structures, apply important algorithmic design paradigms and methods of analysis and synthesize efficient algorithms in common engineering design situations. This course also provide an experience in building algorithms and implementing them on clusters and distributed systems, develop proficiency in problem solving and programming and carry out the analysis of various algorithms for mainly time and space complexity.

Summary of Technical English for Engineers Course

The course covers all the areas of grammar necessary for the undergraduate students of engineering sciences. This includes topics such as reading/writing/listening comprehension, note taking, summarizing, report writing, along with elements of grammar and vocabulary. The course is designed for self-study, where participants will be required to solve regular quizzes and assignments and can also be used as an add-on to classroom teaching.

Student Enrolled: 115 Students

Certified: 47 Students

Outcomes of the Course:

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

- Understand professional writing by studying management communication contexts and genres, researching contemporary business topics, analyzing quantifiable data discovered by researching, and constructing finished professional workplace documents.
- Recognize, explain, and use the formal elements of specific genres of organizational communication: white papers, recommendation and analytical reports, proposals, memorandums, web pages, wikis, blogs, business letters, and promotional documents.
- Understand the ethical, international, social, and professional constraints of audience, style, and content for writing situations a.) among managers or co-workers and colleagues of an organization, and b.) between organizations, or between an organization and the public.

Year: 2020-21

Summary of Course "Problem Solving through Programming in C(noc20-cs56)"

2020-21

C is a programming language that is both versatile and popular, allowing it to be used in a vast array of applications and technologies. It can, for example, be used to write the code for operating systems, much more complex programs and everything in between. Its simplicity and flexibility are largely because it can function independently from machines, which has lent itself to becoming one of the foundational programming languages in the industry.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:48

No. of Students Certified:48

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems and searching and sorting problems and also to solve simple numerical method problems.

Summary of Course "Programming in Java (noc20-cs58)"

Session: 2020-21

With the growth of Information and Communication Technology, there is a need to develop large and complex software. Further, those software should be platform independent, Internet enabled, easy to modify, secure, and robust. To meet this requirement object-oriented paradigm has been developed and based on this paradigm the Java programming language emerges as the best programming environment. Now, Java programming language is being used for mobile programming, Internet programming, and many other applications compatible to distributed systems.

No. of Students Enrolled:34

No. of Students Certified:34

Outcome of the Course:

This course aims to cover the essential topics of Java programming so that the students can improve their skills to cope with the current demand of IT industries and solve many problems in their own filed of studies.

Summary of Automation in Manufacturing Course

Session: 2020-21

Manufacturing industry contributes a major share in the GDP of our country. Application of automated systems is certainly improving the productivity of the manufacturing industry. In view of this, a course on "Automation in Manufacturing" is designed with the primary focus on the design and development of automated systems in the manufacturing. Initially the course introduces various automated systems being used in the manufacturing industry. Then the building blocks of a typical automated system are described. It presents a study on the principle of operation and construction details of sensors/transducers, actuators, drives and mechanisms, hydraulic and pneumatic systems. It also covers up the microprocessor technology, programming and CNC technology. The contents are lucidly presented with real-life examples. Case studies based on manufacturing industry applications are presented.

Student Enrolled: 20 Students

Certified: 05 Students

Outcomes of the Course:

After completion of the course, the students will have in-depth knowledge of sensors, actuators, pneumatic systems, programming and CNC technology.

Summary of Engineering Mathematics-I Course

This course is about the basic mathematics that is fundamental and essential component in all streams of undergraduate studies in sciences and engineering. The course consists of topics in differential calculus, integral calculus, linear algebra and differential equations with applications to various engineering problems. This course will cover the following main topics: Mean Value Theorems; Indeterminate Forms; Taylor's and Maclaurin's Theorems. Partial Derivatives; Differentiability; Taylor's Expansion of Functions of Several Variables. Maxima and Minima. Improper Integrals. Differentiation under Integral Sign (Leibnitz rule). Multiple Integrals and their Properties. Applications of Multiple Integrals. System of Linear Equations. Vector Spaces; Basis and Dimension of a Vector Space. Rank of a Matrix and its Properties. Linear Transformation. Eigenvalues and Eigen vectors. Diagonalization. First Order Differential Equations. Higher Order Differential Equations with Constant Coefficients. Cauchy-Euler Equations.

Student Enrolled: 22 Students

Certified: 4 Students

Course Outcomes:

i) To develop mathematical skill so that students are able to apply mathematical methods & principals in solving problem from Engineering fields.

ii) To make aware students about the importance and symbiosis between Mathematics and Engineering.

Year: 2020-21

Summary of Integrated Waste Management for a Smart City NPTEL Course

A hugh quantity of solid waste is generated across the globe. Integrated Solid Waste Management aspects within the broad subject area of Integrated Waste Management for a Smart City. There are issues of disposal of Municipal Solid Waste (MSW) management, Construction and Demolition (C&D) Waste and Electronic Waste Management. Govt. of India is also taking initiatives such as Swachh Bharat Mission, Smart Cities as well as Make in India.

Students Enrolled: 17 Student

Students Certified: 02 Student

Outcome of the Course:

The student will gain knowledge related to issues of Municipal Solid Waste (MSW) management, Construction and Demolition (C&D) Waste and Electronic Waste Management. Collection, recovery, reuse, recycling, energy-from-waste, and landfilling processes will be understood. The environmental impact of waste management and its relationship on the big picture sustainable development and smart city development will be established. Student will be able to know the challenges of managing these waste streams effectively.

Summary of Fundamentals of Electrical Engineering (noc21-ee68)

This course is mainly for undergraduate First-Year Engineering students from all Specializations. This course will introduce and explain the fundamental concepts of basic electrical engineering. The basic concepts of DC and AC (Single Phase and Three Phase Circuits) network analysis, first order DC transients, steady state and phasor analysis of AC networks, series and parallel resonance and magnetic coupled circuits. This course will also cover Single Phase Transformers, Three Phase Induction Machines and DC Machines. By the end of the course, the students should be able to gather high-quality knowledge of basic electrical engineering.

Student Enrolled: 26 Students

Student Certified: 02 Students

Outcome of the Course:

- The basic concepts of electrical engineering and behavior of electrical and magnetic circuits.
- The generation of alternating voltages & other AC quantities and their supply systems.
- The principle of operation of different electrical machines with their applications.
- The design of digital and analog systems and components.
- The basics of digital communication systems and Instrumentation devices.

Summary of Ethics in Engineering Practice Course

Engineering as a profession is meant to serve the public by strictly adhering to codes of conduct and placing paramount the health, safety and welfare of public. However it raises few conflicting questions like : who is the public? Does it include future generation? Who decides what is best for public? Do engineers have managerial and technical responsibilities? What is the acceptable risk? Do Engineers have responsibilities towards the environment also? Engineering ethics is the study of moral issues and decisions confronting individuals and organizations engaged in engineering and the study of related questions about the moral ideals, character, policies and relationships of people and corporations involved in technological activity. To prepare students for their professional responsibilities as Engineers. To help them recognize and think through ethically significant problem situations that are common in Engineering and to evaluate the existing ethical standards for ENGINEERING Practice.

Student Enrolled: 6 Students

Certified: 2 Students

Outcomes of the Course:

- Distinguish between ethical and non ethical situations.
- Practice moral judgment in conditions of dilemma.
- Relate the code of ethics to social experimentation.
- Develop concepts based on moral issues and enquiry.

Year: 2020-21

Summary of Engineering drawing and computer graphics Course

Session: 2020-21

All phases of manufacturing a product involve expressing basic ideas into graphical format widely known as engineering drawing and design. The present course prepares the students to learn the basics concepts involved in technical drawing skills and computer graphics.

Student Enrolled: 21 Students

Certified: 04 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of understanding of engineering drawings used- computer design and development of 3D objects - exposure to visual aspects of technical drawings.

Summary of Course German-I

Course Code: noc20-hs87

Session: 2020-21

German I is meant to be an introduction to the German language and a basic orientation towards Germany (and to some extent Austria and Switzerland). Learning to understand and articulate oneself in day-to-day real life situations, and to begin to make sense of Germany as a cultural space are the overall objectives of the course. Serious learners should be able to grasp the basic sentence structure and build a good foundational vocabulary through this course.

No. of Students Enrolled: 20

No. of Students Certified: 1

Outcome of the Course:

- Novice High on the ACTFL proficiency scale.
- Acquire basic cultural knowledge of German-speaking countries.
- Basic understanding of foundations of German society

Summary of Constitutional Studies Course

This course aims to introduce the constitutional law of India to students from all walks of life and help them understand the constitutional principles as applied and understood in everyday life. The pedagogy is precise and unique, as per week, the lessons shall be in the form of questions instead of being in pure theoretics. Accompanied with light reading and weekly exercises, the objective of making the Constitution of India, familiar to all students, and not only to law students, but this course also aims and objectifies legal understanding in the simplest of forms.

Student Enrolled: 4 Students

Certified: 1 Students

Year: 2020-21

Summary of Principles of Metal Forming Technology Course

Session: 2020-21

The course focuses on understanding the science and technology of different forming processes. Most of the metallic objects undergo at least one of the metal forming operations, except the cast ones. Understanding basic principles of metal forming and further being applied by engineers and metallurgists directly contribute towards improvement in production in the industries. The concept of stress, deformation and failure, mechanics of metalworking and analysis of different metal working processes will be covered during the whole course. Introduction and working principle of powder metallurgy forging will be presented in the end.

Student Enrolled: 08 Students

Certified: 02 Students

Outcomes of the Course:

After completion of the course, the students will be able to explain principles of metal forming and describe concepts of mechanics of metalworking. The course will enable the students be conversant with working principles so that they can use the knowledge gained towards increasing the productivity of manufacturing industries in the long run.

Summary of Technologies for Clean and Renewable Energy Production Course

The course deals with the production of energy from different fossil fuels through cleaner routes as well as from renewable resources. It is intended to help the young scientific professionals to keep their knowledge upgraded with the current thoughts and newer technology options along with their advances in the field of the utilization of different types of energy resources for cleaner energy production.

Student Enrolled: 6 Students

Certified: 2 Students

Outcomes of the Course:

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

To utilize different type of energy resources for clean energy production.

To apply various energy sources methods to obtain clean energy.

Year: 2020-21

Summary of Product Design and Development Course

Session: 2020-21

It has been established worldwide that the most successful economies are based on innovation and creativity led entrepreneurship. The government is focusing on putting concerted efforts to produce job creators.

The Product Design and Development course is conceptualized and planned in such a way that it helps both job creators as well as job seekers. The main objective of the course is to acquaint the learners/students with the practical knowledge regarding conceptualization, design, and development of a new product. The need of a new product, the product life cycle, the product design process, the application of Value Engineering principles in product design, various product design tools such as CAD, DFM, DFA and DFMA have been explained with relevant and specific examples/ case studies. The concept of Ergonomics in context of the product design has been explained with the help of case studies. The fundamental concept of Rapid Prototyping as well the working principles of the basic rapid prototyping techniques has also been explained.

Student Enrolled: 04 Students

Certified: 01 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Product Design and Development and will be able to apply the basic principles to analyze Product Design and Development systems.

Summary of Design and analysis of algorithms
NPTEL Course(noc20-cs71) (2020-21)

Design and analysis of algorithms: An algorithm is the best way to represent the solution of a particular problem in a very simple and efficient way. If we have an algorithm for a specific problem, then we can implement it in any programming language. An efficient algorithm solves a problem in an efficient way using minimum time and space. Analysis of algorithm is the process of analyzing the problem-solving capability of the algorithm in terms of the time and size required. However, the main concern of analysis of algorithms is the required time or performance. If we require an algorithm to run in lesser time, we have to invest in more memory and if we require an algorithm to run with lesser memory, we need to have more time.

Student Enrolled: 44

Student Certified: 2

Outcome of the Course- This course will help to Analyse the asymptotic performance of algorithms, Write rigorous correctness proofs for algorithms, Demonstrate a familiarity with major algorithms and data structures, Apply important algorithmic design paradigms and methods of analysis and Synthesize efficient algorithms in common engineering design situations. This course also provide an experience in building algorithms and implementing them on clusters and distributed systems, develop proficiency in problem solving and programming and carry out the analysis of various algorithms for mainly time and space complexity.

Summary of Data Science for Engineers

Course (noc20-cs72)
2020-21

Introduction to Data Science for Engineers: Data science is an interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured and unstructured data, and apply knowledge and actionable insights from data across a broad range of application domains.

Student Enrolled: 24

Student Certified: 1

Outcome of the Course:

Learners will be able to describe a flow process for data science problems (Remembering), classify data science problems into standard typology (Comprehension), develop R codes for data science solutions (Application), correlate results to the solution approach followed (Analysis), assess the solution approach (Evaluation), construct use cases to validate approach and identify modifications required (Creating).

Summary of Course Soft Skills for Business Negotiations And Marketing Strategies

Course Code: noc20-mg39

Session: 2020-21

The primary focus of this course is to highlight various categories and applications of soft skills through various cases extracted from the real field and other research case studies. The fundamental concepts and distinctions between Soft Skills and Hard Skills are discussed. The course is tailored very effectively to introduce various Soft skill application examples. This course would be very useful for the students, practicing professionals as well as common people who are voluntarily or involuntarily involved in negotiations and strategies in daily life. The lectures would be supported with illustrative sketches, analysis and demonstrative enactments, in addition to the digital illustrations time to time with various examples. This would facilitate easy comprehension for the students of different level of ability and exposure. Multiple illustrations with case studies would be the strength of this course disseminated with lucid lectures.

No. of Students Enrolled: 14

No. of Students Certified: 4

Outcome of the Course:

- Student will get benifitted as an architect by profession and a professor by occupation

Summary of Course "Body language: Key to professional Success"

Course Code: noc20-hs71

Session: 2020-21

Body language plays a vital role in all formal contexts. The expanding trend of articulating views through vibrant participation in group discussions, power point presentations, team-based tasks, brainstorming and interviews, has made a good command over Body Language a mandatory skill. Whereas technical literacy is essential, it is a confident command over body language which gives an edge in today competitive arena. In all professional interactions, your body language is the only window to your attitudes and feelings; and therefore, it is always as important as your answers. The aim of this course is to impart sensitivity and precision to students understanding of body language so that in professional settings they can regulate their body language can successfully learn to control their hesitation, anxiety, and nervousness to come across as a more confident individual in all formal assessment situations.

No. of Students Enrolled: 46

No. of Students Certified: 1

Outcome of the Course:

- Student will be able to understand the body language to explain things
- Student can understand the certain gestures for more efficient communication.
- Student can understand the important to pay close attention to the effectiveness of your body language relative to what you are concentrating on conveying through it.

Summary of Course "Google Cloud Computing Foundations (noc20-cs96)"

2020-21

Cloud computing is a scalable services consumption and delivery platform that provides on-demand computing service for shared pool of resources, namely servers, storage, networking, software, database, applications etc., over the Internet. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly provisioned and released with minimal management effort.

Cloud computing is the on-demand delivery of computations, storage, applications, and other IT resources through a cloud services platform over the internet with pay-as-you-go business model. Today's Cloud computing systems are built using fundamental principles and models of distributed systems. This course provides an in-depth understanding of distributed computing "concepts", distributed algorithms, and the techniques, that underlie today's cloud computing technologies.

No. of Students Enrolled:12

No. of Students Certified:1

Outcome of the Course:

This course will cover cloud computing and distributed systems concepts and models: virtualization, cloud storage: key-value/NoSQL stores, cloud networking, fault-tolerance cloud using PAXOS, peer-to-peer systems, classical distributed algorithms such as leader election, time, ordering in distributed systems, distributed mutual exclusion, distributed algorithms for failures and recovery approaches, emerging areas of big data and many more. Through this course one can gain solid foundation in Google cloud Platform technologies and services.

Summary of Ecology and Environment Course

The objectives of the course is to introduce and sensitize all BTech students to the issue of ecology, environment and sustainability. The lectures are aimed at posing various questions that are relevant for all students of engineering and management to incorporate sustainability and a sensitivity to ecology and environment in their design of products, processes and systems.

Student Enrolled: 10 Students

Certified: 1 Students

Outcomes of the Course:

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

- Understand methods from ecological and physical sciences and their application in environmental problem solving.
- Understand methods from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.
- Understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales.

Year: 2020-21

Summary of Selection of Nanomaterials for Energy Harvesting and Storage Application Course

Selection of nanomaterials for energy harvesting and storage applications is an interdisciplinary course which deals with selection of nanomaterials and key challenges to improve performance of the energy harvesting and storage devices/techniques. In this course we will be covering different energy harvesting and storage techniques and the parameters that are to be considered in selecting the nanomaterials for the same.

Student Enrolled: 02 Students

Certified: 01 Students

Outcomes of the Course:

After completion of the course, the students will be able to explain different energy harvesting and storage techniques and also proper selection of Nanomaterials.

Year: 2020-21

Summary of Discrete Mathematics

The course will be an introduction to Discrete Mathematics which comprises of the essentials for a computer science student to go ahead and study any other topics in the subject. The emphasis will be on problem solving as well as proofs. We will be providing motivational illustrations and applications throughout the course. The course doesn't assume any pre-requisites except for high school level arithmetic and algebra.

Student Enrolled: 39 Students

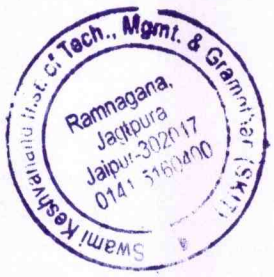
Certified: 1 Students

Outcomes of the Course:

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

- Describe useful standard library functions, create functions, and declare parameters.
- Apply recursive functions and solve recurrence relations.
- Apply basic and advanced principles of counting.

Year: 2020-21



Summary of Introduction to Machine Learning Course (noc20-cs73)

Session: 2020-21

Machine learning (**ML**): ML is the study of computer algorithms that improve automatically through experience and using data. It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as "training data", to make predictions or decisions without being explicitly programmed to do so. Machine learning algorithms are used in a wide variety of applications, such as in medicine, email filtering, speech recognition, and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks

Student Enrolled: 29

Student Certified: 1

Outcome of the Course:

New techniques in the field are evolving rapidly and expanded the application of machine learning to nearly limitless possibilities. Industries that depend on vast quantities of data—and need a system to analyze it efficiently and accurately, have embraced machine learning as the best way to build models, strategize, and plan. Machine learning models learn, identify patterns, and make decisions with minimal intervention from humans. Ideally, machines increase accuracy and efficiency and remove (or greatly reduce) the possibility of human error.

Summary of Introduction to Embedded System Design

Embedded Systems surround us in the form of gadgets and devices that we use. There is no aspect of human lives, which is untouched by such devices at home or for health diagnostics, transportation, and entertainment. This course teaches embedded system design using a building block approach, which allows one to visualize the requirement of an embedded system and then to design it efficiently. The course will teach embedded system design using a microcontroller, namely Texas Instruments MSP430 low power microcontroller. The course will introduce various interfacing techniques for popular input devices including sensors, output devices and communication protocols. It will teach power supply design for embedded applications. It will also teach effective embedded programming techniques in C and how to maintain code using GIT. It will have a significant practical component, which will be achieved through a MSP430 microcontroller kit.

Student Enrolled: 97

Student Certified: 1

Outcome of the Course:

Learning out Embedded Systems will give the skills to design and manufacture embedded system products of the future which will help participants towards better employability. It provides experience to integrate hardware and software for microcontroller applications systems.

Year – 2020-21

Summary of Rapid Manufacturing Course

In the contemporary dynamic manufacturing era, to produce products that can be easily made and can offer typical competences is of utmost importance. Besides basic manufacturing processes, engineering students and manufacturers needs to bolster their skills in advanced technologies. This course is a step in this direction to make the students to learn design, development, and manufacturing using Rapid Manufacturing technologies. Along with specific Rapid Prototyping techniques, manufacturing concerns such as geometric modelling, design for manufacturing and assembly, developing modular designs, group technology, et cetera are included. Laboratory demonstrations are also induced for practical experience. In the end of this course, students should be able to identify the methods and techniques required to manufacture any model.

Student Enrolled: 01 Students

Certified: 01 Students

Outcomes of the Course:

After completion of the course, the students will be able to explain design, development, and manufacturing using Rapid Manufacturing technologies and also select the proper technique for manufacturing the given product.

Year: 2020-21

Summary of Introduction to Operating System Course (noc20-cs75)

Session: **2020-21**

Introduction to Operating System: Operating systems (OS) provide the crucial interface between a computer's hardware and the applications that run on it. It allows us to write programs without bothering much about the hardware. It also ensures that the computer's resources such as its CPU, hard disk, and memory, are appropriately utilized. In this course, we dwell into how the OS manages to do all this in an efficient manner. This is an introductory course, for students with prior knowledge of computer organization. The course is based on an OS called xv6, which in many ways is similar to the Linux operating systems.

Student Enrolled: 68

Student Certified: 3

Outcome of the Course:

Learners will be able to understand the basic components of a computer operating system, and the interactions among the various components. Learner will be made aware of various aspects of operating system that are important for understanding overall functionality of system like scheduling, deadlocks, memory management, synchronization, system calls, and file systems.So this course will help learners in getting more knowledge and job opportunities.

Summary of Geotechnical Engineering Laboratory
NPTEL Course

Geotechnical Engineering: It is an engineering discipline that deals with soil and rock behaviour in an engineering perspective. Geotechnical engineering largely involves defining the soil's strength and deformation properties. In geotechnical testing laboratory, all the index and engineering properties of soil are determined.

Students Enrolled: 20 Student

Students Certified: 02 Student

Outcome of the Course:

After completing this course, students will be able to conduct all the tests done to determine index and engineering parameters of soil. This will help in determining the quality of subgrade soil. Students will be able to categorize the soil on the basis of their properties determined through these tests.

Summary of Developing Soft Skills and Personality Course

The course aims to cause an develop awareness about the significance of soft skills in professional and inter-personal communications and facilitate an all-round development of personality. Hard or technical skills help securing a basic position in one's life and career. But only soft skills can ensure a person retain it, climb further, reach a pinnacle, achieve excellence, and derive fulfilment and supreme joy. Soft skills comprise pleasant and appealing personality traits as self-confidence, positive attitude, emotional intelligence, social grace, flexibility, friendliness and effective communication skills. The focus of this course is on interpersonal and management skills.

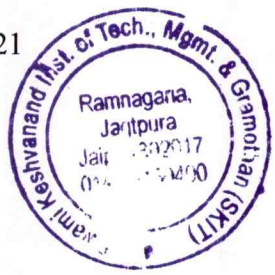
Student Enrolled: 109 Students

Student Certified: 19 Students

Outcome of the Course:

- The course will introduce the basic forms of English language to the students.
- The course will develop the skill to compete the students in competition exam.
- The course will develop reading skill and creative and expressive ability of the students.

Year – 2020-21



Summary of Course Soft Skill

Course Code: noc20-hs60

Session: 2020-21

Soft Skills, a buzz word today has attracted the attention of students, professionals, and entrepreneurs all over the world. Employability, being the major concern today, every individual aims at getting coveted jobs. Employability today is commensurate with proving multiple skills in varied situations in a fast-changing world. Hence, everyone aspiring for jobs today must prove one's mettle in various situations where one requires to be armed with different skills, which, collectively come under Soft Skills. One may be armed with good competence of one's subject, but one cannot compete with his peer groups unless one has the potential of performance. Performance can be ensured with the demonstration of certain abilities that can help a professional communicate, corroborate, convince, evaluate, and investigate the continuing as well as the upcoming trends of the corporate world from time to time. The course aims at creating awareness among the stock holders of the corporate world in which the role of individuals as team players and also as responsible leaders materializes to a great extent. The course will address various challenges of communication as well as behavioural skills faced by individuals at workplace and organizations.

No. of Students Enrolled: 106

No. of Students Certified: 20

Outcome of the Course:

- Effectively communicate through verbal/oral communication and improve the listening skills
- Write precise briefs or reports and technical documents
- Actively participate in group discussion / meetings / interviews and prepare & deliver presentations
- Become more effective individual through goal/target setting, self-motivation and practicing creative thinking.

Summary of "The Joy of Computing using Python" NPTEL Course (noc20-cs83) (2020-21)

Python:

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It provides code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python lets you work quickly and integrate systems more efficiently. At present Python is being used in web development, machine learning applications, along with all cutting edge technology in software industry. Python programming language is very well suited for beginners, also for experienced programmers with other programming languages like C++ and Java.

Student Enrolled: 52
Student Certified: 13

Outcome of the Course:

Python programming is a general-purpose, and used in almost all fields like data science, web development, system automation and administration, basic game development, general and application-specific scripting etc. Additionally at present, Python is widely used by a number of big companies like Google, Pinterest, Instagram, Disney, Yahoo!, Nokia, IBM, and many others. The Raspberry Pi, which is a mini computer relies on Python. So this course will help learners in getting more job opportunities.

Summary of Data Structure and algorithms using Java

NPTEL Course(noc20-cs85) (2020-21)

Data Structure and algorithms using Java: Data Structure can be defined as the group of data elements which provides an efficient way of storing and organizing data in the computer so that it can be used efficiently. Examples of Data Structures are arrays, Linked List, Stack, Queue, etc. Data Structures are the main part of many computer science algorithms as they enable the programmers to handle the data in an efficient way. Data structures can be educated using any of the different programming languages available today. Java programmers use data structures to store and organize data, and use algorithms to manipulate the data in those structures. Java is heavily used at the moment for distributed programming or distributed computing like mobile computing network or Internet programming.

Student Enrolled: 37

Student Certified: 2

Outcome of the Course- Java is good for application software development. For designing front end of an application certain programming concept are requires. GUI programming can be obtained using AWT, swing, JavaFX etc. Participants will able to implement linked lists, stack and queue in JAVA, Binary trees, Representation and operations, Variations of binary tree, Binary search tree, Height balanced search tree, Heap tree etc. Participants are able for Java implementation of binary trees and its variations, Graph data Structure, representation and operations, Searching and sorting algorithms, Greedy algorithms, shortest path algorithms etc.

Summary of Course "Cloud Computing (noc20-cs65)"

2020-21

Cloud computing is a scalable services consumption and delivery platform that provides on-demand computing service for shared pool of resources, namely servers, storage, networking, software, database, applications etc., over the Internet. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly provisioned and released with minimal management effort.

Cloud computing can be deployed universally in practically no time and offer the most extreme flexibility, agility and cost-sparing IT operations to business for progressively profitable and consistent development. This, thus, is making entrepreneurs change to cloud computing for completing business activities.

No. of Students Enrolled:32

No. of Students Certified:4

Outcome of the Course:

This course will introduce various aspects of cloud computing, including fundamentals, management issues, security challenges and future research trends. This will help students and researchers to use and explore the cloud computing platforms.

Summary of Introduction to internet of things

Course (noc20-cs66)
2020-21

Introduction to internet of things (IoT): An overview of IOTs, design of smart objects that provide collaboration and ubiquitous services will be explored. Design for longevity/energy efficiency will be highlighted. Step by step system design will be introduced. IoT design means that the focus is on singular experiences and no longer but about design principles that represent a broader ecosystem within which IoT devices function.

Student Enrolled: 28 Student

Student Certified: 2 Student

Outcome of the Course:

The IoT provides a platform that creates opportunities for people to connect these devices and control them with big data technology, which in return will promote efficiency in performance, economic benefits and minimize the need for human involvement. It's the most important development of the 21st century. So this course will help learners in getting more knowledge and job opportunities.

Summary of Python for data science NPTEL Course (noc20-cs-80) (2020-21)

Python for data science: Data science is basically the science of analysing raw data and deriving insights from this data. There are multiple techniques to derive insights; a simple statistical techniques, a more complicated and more sophisticated machine learning techniques etc. The key focus of data science is actually deriving these insights using whatever techniques we want to use.

Student Enrolled: 31

Student Certified: 1

Outcome of the Course- The course aims at equipping participants to be able to use python programming for solving data science problems, to enable to learn Data Science concepts from scratch. Participants understand important Python programming concepts such as data operations, file operations, object-oriented programming and various Python libraries such as Pandas, Numpy, Matplotlib essential for Data Science. This course will make understand the various types of Machine Learning, Recommendation Systems and many more Data Science concepts, to help to get started with Data Science career. Participants Learn to apply data science methods and techniques, and acquire analysis skills.

Summary of Principles of Management Course (noc20-mg58)

Session: 2020-21

The objective of this course is to acquaint students with the terms, concepts, and points of view used in management and its historical evolution, ethics, social responsibility and environmental issues; provide students with a working knowledge of the skills and functions necessary to be an effective, efficient manager; provide an introduction to the theory and practice of managing organizations; examine the management functions (planning, organizing, leading or influencing, and controlling) and the impact of those functions on the business organization

Student Enrolled: 14 Students

Certified: 09 Students

Outcomes of the Course:

After completion of the course:

- Understand the concepts related to Business.
- Demonstrate the roles, skills and functions of management.
- Understand the complexities associated with management of human resources..

Summary of Heat Transfer Course

Heat transfer is one of the most important areas of engineering sciences. It is major mode of heat transfer during flowing fluid and it is the most common mode of heat transfer used in industry. This course will cover the preliminary concepts, forced convection and natural convection for external flows and internal flows, turbulent flows and phase change heat transfer. Numerical solution of the governing equations will also be covered.

Student Enrolled: 7 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Heat Transfer and will be able to apply the basic principles to analyze Heat Transfer systems.

Year: 2020-21

Summary of Fundamentals of Convective Heat Transfer Course

Convective heat transfer is one of the most important areas of engineering sciences. It is major mode of heat transfer during flowing fluid and it is the most common mode of heat transfer used in industry. This course will cover the preliminary concepts, forced convection and natural convection for external flows and internal flows, turbulent flows and phase change heat transfer. Numerical solution of the governing equations will also be covered.

Student Enrolled: 29 Students

Certified: 06 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Convective Heat Transfer and will be able to apply the basic principles to analyze Convective Heat Transfer systems.

Year: 2020-21

Summary of Computer Graphics

Computer graphics is one of the fundamental aspects of any computing system. Its primary role is to render the digital content (0's and 1's) in a human-comprehensible form on the computer screen. The rendering follows a series of stages, collectively known as the graphics pipeline. In this course, we will introduce the pipeline and its stages. The topics covered include various object representation techniques followed by the pipeline stages of modeling transformation, 3D to 2D viewing transformation, clipping and hidden surface removal and scan conversion (rendering). We shall follow the stages of the 3D graphics pipeline. In order to complete the coverage, we shall also briefly introduce the present-day graphics hardware (I/O devices, GPU) and the widely popular openGL graphics library.

Student Enrolled: 65 Students

Student Certified: 5 Students

Outcome of the Course:

On completion of this course, the Participants will be able to

- Explain the core concepts of computer graphics, including viewing, projection, perspective, modelling and transformation in two and three dimensions.
- Apply the concepts of colour models, lighting and shading models, textures, ray tracing, hidden surface elimination, anti-aliasing, and rendering.

Year – 2020-21 (noc20-cs90)

Summary of Course "Introduction to Programming in C(noc20-cs91)"

2020-21

C is a highly efficient and simplistic programming language that was initially developed to write operating systems. Among its many benefits and features that make it so flexible and easy to use, it has low-level access to memory, a clean and concise style and a simplistic set of keywords. Additionally, the source code that is written using C for one system can work just as effectively on another operating system without experiencing any changes.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:29

No. of Students Certified:1

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems.

Summary of Course "Programming in C++ (noc20-cs57)"

2020-21

C++ is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and so on. C++ supports different ways of programming like procedural, object-oriented, functional, and so on. This makes C++ powerful as well as flexible.

C++ is still readily used in programming today. Despite the advent of popular object-oriented programming languages like Python, C++ continues to have a dedicated space in the tech world. C++ is still the go to language for solutions that need fast machine performance. AAA video games, IoT, embedded systems, and resource-heavy VR and AI applicationsall run on C or C++.

No. of Students Enrolled:212

No. of Students Certified:23

Outcome of the Course:

This course builds up on the knowledge of C programming and basic data structure (array, list, stack, queue, binary tree etc.) to create a strong familiarity with C++98 and C++03. Besides the constructs, syntax and semantics of C++ (over C), it also focusses on various idioms of C++ and attempt to go to depth with every C++ feature justifying and illustrating them with several examples and assignment problems. On the way, it illustrates various OOAD (Object-Oriented Analysis and Design) and OOP (Object-Oriented Programming) concepts.

While this course can be understood independently, it would help in developing understanding in OOP.

Summary of Course "Database Management Systems (noc20-cs60)"

2020-21

Databases form the backbone of all major applications today – tightly or loosely coupled, intranet or internet based, financial, social, administrative, and so on. Structured Database Management Systems (DBMS) based on relational and other models have long formed the basis for such databases. Consequently, Oracle, Microsoft SQL Server, Sybase etc. have emerged as leading commercial systems while MySQL, PostgreSQL etc. lead in open source and free domain. While DBMS differ in the details, they share a common set of models, design paradigms and a Structured Query Language (SQL).

No. of Students Enrolled: 24

No. of Students Certified: 8

Outcome of the Course:

This course introduces the students to the various theoretical and practical principles involved in the design and use of databases systems with the help of database management systems (DBMS) and the SQL Standard.

Summary of Soil Mechanics/Geotechnical Engineering I
NPTEL Course (noc20-ce38)

Geotechnical Engineering: Geotechnical engineering is the branch of engineering concerned with the analysis, design and construction of foundations, slopes, retaining structures, embankments, tunnels, landfills and other systems that are made of or are supported by soil or rock. The geotechnical research ranges in nature from analytical and numerical study of geotechnical problems to constitutive modeling, experimental modeling and design. Geotechnology plays a key role in all civil engineering projects built on or in the ground, and it is vital for the assessment of natural hazards such as earthquakes, liquefaction, sinkholes, rock falls and landslides.

Students Enrolled: 48 Student

Students Certified: 07 Student

Outcome of the Course:

After completing the course, the student will have an ability to apply knowledge of mathematics, science and engineering while analysis and design of geotechnical structure ant its components. Student is expected to solve complex geotechnical engineering problems and able to propose optimal, feasible and economical design solution. The student is expected to understand and follow ethical practices in geotechnical engineering.

Summary of Introduction to multimodal urban transportation systems NPTEL Course

Transportation systems are a fundamental part of logistics and planning whenever vehicles are used to move people or items from one location to another. A transportation system can be defined as the combination of elements and their interactions, which produce the demand for travel within a given area and the supply of transportation services to satisfy this demand. To deal with this, Planning, Operation and Management of Transportation Facilities is very important.

Students Enrolled: 48 Student

Students Certified: 05 Student

Outcome of the Course:

On completion of this course, student will be able to identify the sustainability principles in transportation, concept of Travel Demand Management (TDM), disseminate the techniques of urban public transit planning, operations and management. Student will be able to learn the concepts of non-motorized urban transport and applications in intelligent transportation systems (ITS).

Summary of Theory of Computation

NPTEL Course(noc21-cs83)

Session: (2020-21)

Theory of Computation: Automata Theory is a branch of computer science that deals with designing abstract self-propelled computing devices that follow a predetermined sequence of operations automatically. An automaton with a finite number of states is called a Finite Automaton. This is a brief and concise tutorial that introduces the fundamental concepts of Finite Automata, Regular Languages, and Pushdown Automata before moving onto Turing machines and Decidability.

Student Enrolled: 17

Student Certified: 1

Outcome of the Course- able to design Finite Automata machines for given problems; able to analyze a given Finite Automata machine and find out its Language; able to design Pushdown Automata machine for given CF language(s); able to generate the strings/sentences of a given context-free languages using its grammar; able to design Turing machines for given any computational problem.

Summary Report Sample (2019-20)

Summary of Campus Recruitment Training (CRT) Program

Campus Recruitment training (CRT) at is designed to aid candidates in their preparation for Recruitment through Campuses or outside campuses (i.e On campus or off campus). Students in their final step of graduation and post-graduation looking for placement in reputed organizations can make use of this training to get trained to deliver their best in the selection processes of organizations.

Session: 2019-20

Student Enrolled: 917 Student

Student Benefited: 917 Student

After completion of CRT students will be able to-

1. Understand organizational procedures and policies as related to how the employers process for campus recruitment and employer preferences
2. Use self-assessments to identify strengths, weaknesses, transferable skills, and prime marketable characteristics.
3. Organize and write an effective cover letter and Resume.
4. Exercise judgment and logical decision making in selecting from alternative techniques for Group Discussion & Interview.

Swami Keshvanand Inst. of Tech., Mgmt. & Gramothan (SKIT)
Ramnagana, Jaipur

Summary of Arduino Spoken Tutorial Course (2019-20)

Arduino: Arduino is a prototype platform (open-source) based on an easy-to-use hardware and software. It consists of a circuit board, which can be programmed (referred to as a micro controller) and ready-made software called Arduino IDE (Integrated Development Environment), which is used to write and upload the computer code to the physical board. Arduino boards can read analog or digital input signals from different sensors and turn it into an output such as activating a motor, turning LED on/off, connect to the cloud and many other actions.

Students Enrolled: 69 Student

Students Certified: 69 Student

Outcome of the Course:

After completion of this course, students will be able to understand different smart system applications, concepts of Embedded C programming language. They will acquire the knowledge of Arduino boards and its basic components.

Summary of C++ Spoken Tutorial Course (2019-20)

C++: C++ is a cross-platform language that can be used to create high performance applications. It gives programmers a high level of control over system resources and memory. It is an object-oriented programming language which gives a clear structure to programs and allows code to be reused, lowering development costs. It is portable and can be used to develop applications that can be adapted to multiple platforms. C++ is a middle-level language rendering it the advantage of programming low-level (drivers, kernels) and even higher-level applications (games, GUI, desktop apps etc.).

Student Enrolled: 244

Student Certified: 230

Outcome of the Course

C++ plays quite an integral role in modern times as many contemporary systems such as operating systems, web browsers, databases, etc. have C++ code in at least some part of their codebase. Moreover, C++ is quite useful in performance critical areas because of its speed. C++ is a programming language that is used in everyday life. It is an object-oriented language, and all the features of C programming language are used here. This is used for games, operating systems, autonomous cars as well as medical technology. C++ Developers are quite sought after and they hold some of the most high-paying jobs in the industry.

Summary of LaTeX Spoken Tutorial Course (2019-20)

LaTeX: LaTeX is most used to create documents for academia, such as academic journals. In LaTeX, the author doesn't stylize the document directly, like in a word processor such as Microsoft Word, LibreOffice Writer, or Apple Pages; instead they write code in plain text that must be compiled to produce a PDF document.

Student Enrolled: 228

Student Certified: 124

Outcome of the Course- Latex is used to write documents containing mathematical formulas, articles in different journal styles, drawing graphs and figures, preparing presentation, write mathematical documents etc. So this course is also helpful creating documents using plain text, stylized using markup tags, similar to HTML/CSS or Markdown.

Summary of Java Spoken Tutorial Course (2019-20)

Java: With the growth of Information and Communication Technology, there is a need to develop large and complex software. Further, that software should be platform independent, Internet enabled, easy to modify, secure, and robust. To meet this requirement object-oriented paradigm has been developed and based on this paradigm the Java programming language emerges as the best programming environment. Now, Java programming language is being used for mobile programming, Internet programming, and many other applications compatible to distributed systems. This course aims to cover the essential topics of Java programming so that the participants can improve their skills to cope with the current demand of IT industries and solve many problems in their own filed of studies.

Student Enrolled: 270

Student Certified: 242

Outcome of the Course

Java is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc. Upon successful completion of this course, students will be Familiar with Java Programming Features, Java Programming Tools, Application versus Applet, Access Modifiers in Java, Basics of JDBC Driver and Jframe.

Summary of C Spoken Tutorial Course

C: C is a procedure-oriented computer programming language which means we can use C to create lists of instructions for a computer to solve specific problem. Programs written in C are highly portable which means program written in one machine can be moved to other which is very important and powerful feature of programming language.

Students Enrolled: 64 Student

Students Certified: 57 Student

Outcome of the Course:

After completion of this course, students will be able to understand a functional hierarchical code organization. They will develop the ability to define and manage data structures based on problem subject domain and to work with textual information, characters and strings, arrays of complex objects. They will be able to handle possible errors during program execution.

Summary of Python 3.4.3 Spoken Tutorial Course (2019-20)

Python 3.4.3: Python is a powerful and object-oriented high-level programming language. It has very simple easy-to-use syntax, which makes it the perfect language for someone trying to learn computer programming for the first time. It works on cross-platform operating systems and can be used across to develop a wide range of applications including those intended for image processing, text processing, web and enterprise level using scientific, numeric and data from the network.

Students Enrolled: 65 Student

Students Certified: 53 Student

Outcome of the Course:

After completion of this course, students will acquire Object Oriented programming skills in core Python. They will be able to design Graphical user interfaces and write database applications in Python.

Summary of C++ Spoken Tutorial Course (2019-20)

C++: C++ is a cross-platform language that can be used to create high performance applications. It gives programmers a high level of control over system resources and memory. It is an object-oriented programming language which gives a clear structure to programs and allows code to be reused, lowering development costs. It is portable and can be used to develop applications that can be adapted to multiple platforms. C++ is a middle-level language rendering it the advantage of programming low-level (drivers, kernels) and even higher-level applications (games, GUI, desktop apps etc.).

Student Enrolled: 90

Student Certified: 76

Outcome of the Course

C++ plays quite an integral role in modern times as many contemporary systems such as operating systems, web browsers, databases, etc. have C++ code in at least some part of their codebase. Moreover, C++ is quite useful in performance critical areas because of its speed. C++ is a programming language that is used in everyday life. It is an object-oriented language and all the features of C programming language are used here. This is used for games, operating systems, autonomous cars as well as medical technology. C++ Developers are quite sought after, and they hold some of the most high-paying jobs in the industry.

Summary of Course Soft Skill

Course Code: noc19-hs33

Session: 2019-20

Soft Skills, a buzz word today has attracted the attention of students, professionals, and entrepreneurs all over the world. Employability, being the major concern today, every individual aims at getting coveted jobs. Employability today is commensurate with proving multiple skills in varied situations in a fast-changing world. Hence, everyone aspiring for jobs today must prove one's mettle in various situations where one requires to be armed with different skills, which, collectively come under Soft Skills. One may be armed with good competence of one's subject, but one cannot compete with his peer groups unless one has the potential of performance. Performance can be ensured with the demonstration of certain abilities that can help a professional communicate, corroborate, convince, evaluate, and investigate the continuing as well as the upcoming trends of the corporate world from time to time. The course aims at creating awareness among the stock holders of the corporate world in which the role of individuals as team players and also as responsible leaders materializes to a great extent. The course will address various challenges of communication as well as behavioural skills faced by individuals at workplace and organizations.

No. of Students Enrolled: 62

No. of Students Certified: 6

Outcome of the Course:

- Effectively communicate through verbal/oral communication and improve the listening skills
- Write precise briefs or reports and technical documents
- Actively participate in group discussion / meetings / interviews and prepare & deliver presentations
- Become more effective individual through goal/target setting, self-motivation and practicing creative thinking.

Summary of Course "Developing Soft Skills and Personality (noc19-hs32)"

Session: 2019-20

The course aims to cause a basic awareness about the significance of soft skills in professional and inter-personal communications and facilitate an all-round development of personality. Hard or technical skills help securing a basic position in one's life and career. But only soft skills can ensure a person retain it, climb further, reach a pinnacle, achieve excellence, and derive fulfilment and supreme joy. Soft skills comprise pleasant and appealing personality traits as self-confidence, positive attitude, emotional intelligence, social grace, flexibility, friendliness and effective communication skills.

No. of Students Enrolled:575

No. of Students Certified:175

Outcome of the Course:

- Effectively communicate through verbal/oral communication and improve the listening skills
- Write precise briefs or reports and technical documents
- Actively participate in group discussion / meetings / interviews and prepare & deliver presentations
- Become more effective individual through goal/target setting, self-motivation and practicing creative thinking.
- Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of teamwork, Inter-personal relationships, conflict management and leadership quality.

Summary of "The Joy of Computing using Python" NPTEL Course (2019-20)

Session: 2019-20 (noc19-cs41)

Python:

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It provides code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python lets you work quickly and integrate systems more efficiently. At present Python is being used in web development, machine learning applications, along with all cutting edge technology in software industry. Python programming language is very well suited for beginners, also for experienced programmers with other programming languages like C++ and Java.

Student Enrolled: 433

Student Certified: 41

Outcome of the Course:

Python programming is a general-purpose, and used in almost all fields like data science, web development, system automation and administration, basic game development, general and application-specific scripting etc. Additionally at present, Python is widely used by a number of big companies like Google, Pinterest, Instagram, Disney, Yahoo!, Nokia, IBM, and many others. The Raspberry Pi, which is a minicomputer relies on Python. So this course will help learners in getting more job opportunities.

Summary of Course "Calculus of Several Real Variables"

Session: 2019-20

This course introduces the very important subject called the calculus of several real variables, which has important applications in science and engineering. The modern world would have been impossible without it. We introduce and discuss the subject in a non-traditional way taking the vector approach in most places. We start with the basics of Vectors, study continuity and partial derivatives, study multiple integrals and their applications and end with the stokes Theorem and Gauss divergence theorem.

No. of Students Enrolled:16

No. of Students Certified:2

Outcome of the Course:

1. Demonstrate understanding of the basic concepts of calculus involving more than one real variable.
2. Apply the theory in the course to solve a variety of problems at an appropriate level of difficulty.

Summary of Course "Body language: Key to professional Success"

Course Code: noc19-hs34

Session: 2019-20

Body language plays a vital role in all formal contexts. The expanding trend of articulating views through vibrant participation in group discussions, power point presentations, team-based tasks, brainstorming and interviews, has made a good command over Body Language a mandatory skill. Whereas technical literacy is essential, it is a confident command over body language which gives an edge in today competitive arena. In all professional interactions, your body language is the only window to your attitudes and feelings; and therefore, it is always as important as your answers. The aim of this course is to impart sensitivity and precision to students understanding of body language so that in professional settings they can regulate their body language can successfully learn to control their hesitation, anxiety, and nervousness to come across as a more confident individual in all formal assessment situations.

No. of Students Enrolled: 26

No. of Students Certified: 1

Outcome of the Course:

- Student will be able to understand the body language to explain things
- Student can understand the certain gestures for more efficient communication.
- Student can understand the important to pay close attention to the effectiveness of your body language relative to what you are concentrating on conveying through it.

Summary of Course "Psychology of Everyday"

Session: 2019-20

This course picks-up threads from the basic observed behavior in everyday life and enters into a dialogue facilitating self-reflection and thus better self-understanding. The emphasis is on what a common man observes and how the knowledge of psychology and psychiatry can be applied to it for better clarity.

No. of Students Enrolled:5

No. of Students Certified:1

Outcome of the Course:

- Describe the evolution of psychology and the major pioneers in the field
- Identify the various approaches, fields, and subfields of psychology along with their major concepts and important figures
- Describe the value of psychology and possible careers paths for those who study psychology.
- Describe the strengths and weaknesses of descriptive, experimental, and correlational research.

Summary of Principles of Construction Management NPTEL Course

Principles of Construction Management: The course seeks to present a rounded view of the divers issues involved in the management of construction projects, and includes aspects like construction economics, quality and safety management, and contract management, apart from time management and scheduling, estimation. It is hoped that engineers working in contracting, consulting and other organizations related to construction projects will also find the course useful.

Students Enrolled: 11 Student

Students Certified: 01 Student

Session: 2019-20

Outcome of the Course:

After completing this course, students will be able to understand engineer working in field. This course will also help the students to understand tendering, contracting planning & scheduling processes of project.

Summary of Product Design Using Value Engineering

Product Design Using Value Engineering: It has been established worldwide that the most successful economies are based on innovation and creativity led entrepreneurship. The government is focusing on putting concerted efforts to produce job creators.

The current MOOC on Product Design using Value Engineering is conceptualized and planned in such a way that it helps both job creators as well as job seekers. The main objective of the course is to acquaint the learners/students with the practical knowledge regarding conceptualization, design and development of a new product with a focused Value Engineering Approach. The difference between the concept of Value Engineering and Cost Cutting has been elaborated with examples. The Value Engineering Job Plan (VEJP) has also been discussed, especially in context of the product design process. Different types of product functions, their identification, definition, analysis has been explained with examples. Various concepts, such as function-cost relationship have been explained with relevant and specific examples/ case studies.

Student Enrolled: 8 Students

Student Certified: 1 Student

Outcome of the Course: After completion this course, students will be able to explain the need of a new product, the product design process, the application of Value Engineering principles in product design process.

Summary of Geotechnical Engineering Laboratory NPTEL Course

Geotechnical Engineering: It is an engineering discipline that deals with soil and rock behaviour in an engineering perspective. Geotechnical engineering largely involves defining the soil's strength and deformation properties. In geotechnical testing laboratory, all the index and engineering properties of soil are determined.

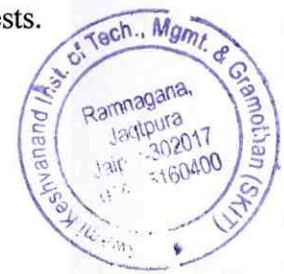
Students Enrolled: 06 Student

Students Certified: 01 Student

Session: 2019-20 (noc19-ce36)

Outcome of the Course:

After completing this course, students will be able to conduct all the tests done to determine index and engineering parameters of soil. This will help in determining the quality of subgrade soil. Students will be able to categorize the soil on the basis of their properties determined through these tests.



Summary of Analog Communication

AC: The word communication arises from the Latin word commūnicāre, which means "to share". Communication is the basic step for exchange of information.For example, a baby in a cradle, communicates with a cry when she needs her mother. A cow moos loudly when it is in danger. A person communicates with the help of a language. Communication is the bridge to share. Communication can be defined as the process of exchange of information through means such as words, actions, signs, etc., between two or more individuals. A continuous time varying signal, which represents a time varying quantity can be termed as an Analog Signal. This signal keeps on varying with respect to time, according to the instantaneous values of the quantity, which represents it.

Student Enrolled: 17 Student

Student Certified: 1 Student

Outcome of the Course:

The fundamentals of signals & linear time invariant systems is used in communication systems. Knowledge of probability, random variables & random processes are learnt. In depth knowledge of different types of analog communication system and different modulation techniques used in these systems leads to analysis of noise and its impact on different modulation techniques.

Session: 2019-20

Summary of Educational Leadership Course

In the context of Global, Multicultural & Virtual work environments domain knowledge alone is not a sufficient guarantee for professional success. Since long we have been talking about organizational leadership or corporate leadership. In fact leadership is an adjective mostly attached to the growth of industry. Rarely do we realize the importance of leadership in educational institutions. This course is designed to help the teaching/Academic professionals to understand how educational leadership can transform and enhance the effectiveness of educational institutions. This course intends to focus on academic community and to encourage individual members to develop various skills, competencies, abilities to enhance their leadership skills. It will also help them to develop awareness into their self-motivation, reflective practices, critical thinking, and positive plans of actions for enhancing their leadership impact and institutional effectiveness. This course is aimed to mobilize human resources of education sector, educational administration, and prospective teachers.

Student Enrolled: 5 Students

Certified: 2 Students

Outcomes of the Course:

Provide educational leadership through the use of leadership principles and technology applicable to educational organizations.

Create and sustain an educational organization by synthesizing and utilizing leadership principles using creativity and risk-taking strategies

Year: 2020-21

Summary of Project management for managers Course

Project management is an essential skill-set for many careers and in many contexts in our lives. Project Management is an ideal starting point if you need to manage projects at work or at home, while not necessarily being a formally trained project manager. It is also suitable if you are considering undertaking a project soon and are seeking to learn and apply essential project management knowledge and skills.

Student Enrolled: 3 Students

Certified: 1 Students

Outcomes of the Course:

- Assumes responsibility as a professional practitioner of project management, applying PM principles and practices while maintaining high standards of practice, making ethical judgments and decisions in a respectful, and sustaining professional standing through a commitment to life-long learning
- Demonstrates effective use of written, verbal, and non-verbal communication, uses industry terminology, writes a variety of Project Management documents and plans, applies processes required to manage the communications of a project (including appropriate and timely management of project information), and uses technology appropriate to the task

Year: 2019-20

Summary of Robotics Course (noc19-me74)

Robotics: The course will start with a brief introduction to robots and robotics. The motivation behind keeping robots in modern industries will be discussed. After providing a brief history of robotics, different components of a robotic system will be identified. The method of determining degrees of freedom of a robotic system will be discussed with some examples. After classifying the robots based on certain criteria, workspace analysis of manipulators will be carried out. Applications of robots in different areas like in manufacturing units, medical science, space, and others, will be discussed. Various methods of robot teaching will be explained with some suitable examples. Economic analysis will be conducted to decide whether we should purchase a robot. Both forward and inverse kinematics problems will be solved with the help of some suitable examples. To ensure smooth variation of joint angles of the robot, trajectory planning schemes will be explained. After carrying out velocity analysis with the help of Jacobian matrix, inverse dynamics problems of robots will be solved using Lagrange-Euler formulation. Control scheme used in robots to realize the joint torques will be discussed. Besides manipulators, analysis will be carried out on wheeled and multi-legged robots. The working principles of various sensors used in robots will be explained in detail. The steps to be followed in robot vision will be discussed with some suitable examples.

Student Enrolled: 22 Students

Student Certified: 2 Students

Session: 2019-20

Outcome of the Course: After studying this course, students will be able to explain the principles of motion planning algorithms in detail and will be able to deal with all the issues related to kinematics, dynamics, control schemes and robot intelligence.

Summary of Data Science for Engineers Course

noc19-cs60

2019-20

Introduction to Data Science for Engineers: Data science is an interdisciplinary field that uses scientific methods, processes, algorithms, and systems to extract knowledge and insights from structured and unstructured data and apply knowledge and actionable insights from data across a broad range of application domains.

Student Enrolled: 16

Student Certified: 1

Outcome of the Course:

Learners will be able to describe a flow process for data science problems (Remembering), classify data science problems into standard typology (Comprehension), develop R codes for data science solutions (Application), correlate results to the solution approach followed (Analysis), assess the solution approach (Evaluation), construct use cases to validate approach and identify modifications required (Creating).

Summary of Strength of Materials NPTEL Course

Course Code: noc19-ce18

Strength of Materials: Strength of Materials is a fundamental subject. As the engineering design of different components, structures etc. used in practice are done using different kinds of materials, it is essential to understand the basic behavior of such materials. The objective of the present course is to make the students acquainted with the concept of load resultant, consequences and how different kinds of loadings can be withstood by different kinds of members with some specific materials. This course is designed so that the students can grasp the basics of the application of loading system and its consequence in a deformable body.

Students Enrolled: 51 Students

Students Certified: 01 Students

Outcome of the Course:

After completing this course, students will be able to understand basic concepts of structural design. This course will also help the students to understand the stress-strain relation and bending & deflection of beams.

Session- 2019-20

Summary of Wastewater Treatment and Recycling

Session: 2019-20

With growing concerns over freshwater availability, concept of treating and recycling wastewater is progressively getting more pertinent. However, wastewater to be recycled need to be treated first for ensuring its quality sufficiently fit for designated uses, such as irrigation, industrial processes, toilet flushing, ground water recharge etc. Wastewater treatment can be specifically tailored to meet the water quality requirements of a planned reuse, as some would need only moderate treatment while few others may require higher degree purification.

Students Enrolled: 16 Student

Students Certified: 01 Student

Outcome of the Course:

Student will be able to determine various treatment technologies and their application for producing reuse quality water from wastewater. Course will largely cover topics that includes the basic philosophy of wastewater treatment, principles of various wastewater treatment units, conventional treatment systems, advanced treatment processes, recycling and reuse opportunities and wastewater reuse criteria. Comprehensive knowledge and understanding on technologies for water reclamation and reuse will be gained.

Summary of Numerical methods Course

The development of fast, efficient and inexpensive computers has significantly increased the range of engineering problems that can be solved reliably. Numerical Methods use computers to solve problems by step-wise, repeated and iterative solution methods, which would otherwise be tedious or unsolvable by hand-calculations. This course is designed to give an overview of numerical methods of interest to scientists and engineers. However, the focus being on the techniques themselves, rather than specific applications, the contents should be relevant to varied fields such as engineering, management, economics, etc.

Student Enrolled: 19 Students

Certified: 1 Students

Outcomes of the Course:

Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. Analyse and evaluate the accuracy of common numerical methods.

Year: 2019-20

Summary of Gender Justice and Workplace Security Course

The issue of gender justice has been a matter of discussion and deliberation, both at the international and national levels. With the increased participation of women in all walks of life, particularly at the workplace and the breaking of hitherto social, political and religious gender barriers, the issue has assumed significance and become subject- matter of debate at all levels including law. Today, women are donning multiple roles, apart from being a homemaker- they are working as top executives in MNCs, working as legislators in State and Central legislatures, working as educators in the education sector, etc. While the changed societal matrix & perception and economic globalization have made way for the increased participation of women, the concern over the free play of discriminatory attitudes and prejudicial mindsets often pose challenges to women and targets of multi-facet retaliations and disincentives. The incident of Nirbhaya in the Capital of the Nation not only exhibits how such treatment is basically an anathema to the concept of gender justice but also exposes the barbaric mindset annihilating the values of basic civilization. The days of yore when women were treated as fragile, feeble, dependent and subordinate to men, should be a matter of history.The course is aimed at acquainting the participants with the concept of gender justice. From the arena of Constitutional guarantees to criminal law to laws ensuring safety at the workplace, specifically sexual harassment, the course will focus on an understanding the laws, its procedural intricacies and judicial decisions aimed at strengthening the position of women in society.

Student Enrolled: 7 Students

Certified: 1 Students

Outcomes of the Course:

- This course will be helpful in minimizing gender bias among teachers, scholars and academicians; whereby students will also develop an equitable and just thinking towards women and LGBTQs.
- A gender bias free teaching-learning process can be instrumental in bringing about positive social change towards an egalitarian society.

Summary of Engineering Mechanics Course

Fluid Mechanics has a wide scope and is of prime importance in several fields of engineering and science. Present course emphasizes the fundamental underlying fluid mechanical principles and application of those principles to solve real life problems. Special attention is given towards deriving all the governing equations starting from the fundamental principle. There is a well-balanced coverage of physical concepts, mathematical operations along with examples and exercise problems of practical importance.

Student Enrolled: 170 Students

Certified: 2 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Fluid Mechanics and will be able to apply the basic principles to analyze fluid mechanical systems.

Summary of Course German-I

Course Code: noc19-hs51

Session: 2019-20

German I is meant to be an introduction to the German language and a basic orientation towards Germany (and to some extent Austria and Switzerland). Learning to understand and articulate oneself in day-to-day real life situations, and to begin to make sense of Germany as a cultural space are the overall objectives of the course. Serious learners should be able to grasp the basic sentence structure and build a good foundational vocabulary through this course.

No. of Students Enrolled: 15

No. of Students Certified: 1

Outcome of the Course:

- Novice High on the ACTFL proficiency scale.
- Acquire basic cultural knowledge of German-speaking countries.
- Basic understanding of foundations of German society

Summary of Ethics in Engineering Practice Course

Engineering as a profession is meant to serve the public by strictly adhering to codes of conduct and placing paramount the health, safety and welfare of public. However it raises few conflicting questions like : who is the public? Does it include future generation? Who decides what is best for public? Do engineers have managerial and technical responsibilities? What is the acceptable risk? Do Engineers have responsibilities towards the environment also? Engineering ethics is the study of moral issues and decisions confronting individuals and organizations engaged in engineering and the study of related questions about the moral ideals, character, policies and relationships of people and corporations involved in technological activity. To prepare students for their professional responsibilities as Engineers. To help them recognize and think through ethically significant problem situations that are common in Engineering and to evaluate the existing ethical standards for ENGINEERING Practice.

Student Enrolled: 6 Students

Certified: 2 Students

Outcomes of the Course:

- Distinguish between ethical and non ethical situations.
- Practice moral judgment in conditions of dilemma.
- Relate the code of ethics to social experimentation.
- Develop concepts based on moral issues and enquiry.

Year: 2019-20

Summary of Integrated Waste Management for a Smart City NPTEL Course

A high quantity of solid waste is generated across the globe. Integrated Solid Waste Management aspects within the broad subject area of Integrated Waste Management for a Smart City. There are issues of disposal of Municipal Solid Waste (MSW) management, Construction and Demolition (C&D) Waste and Electronic Waste Management. Govt. of India is also taking initiatives such as Swachh Bharat Mission, Smart Cities as well as Make in India.

Students Enrolled: 07 Student

Students Certified: 01 Student

Session: 2019-20 **(noc19-ce31)**

Outcome of the Course:

The student will gain knowledge related to issues of Municipal Solid Waste (MSW) management, Construction and Demolition (C&D) Waste and Electronic Waste Management. Collection, recovery, reuse, recycling, energy-from-waste, and landfilling processes will be understood. The environmental impact of waste management and its relationship on the big picture sustainable development and smart city development will be established. Student will be able to know the challenges of managing these waste streams effectively.

Summary of Microwave Theory and Techniques Course

The course broadly focusses on analysis, design and development of microwave circuits and systems. The course covers introduction to Microwaves, Microwave transmission modes, Transmission lines, Impedance Matching, Microwave Network Analysis, Directional Coupler, Power Divider, Microwave Filters, Microwave Attenuator, RF switches and phase shifters, Microwave Amplifiers, Low Noise Amplifier, Microwave Mixers and Oscillators, Microwave Antennas, Microwave Measurements, Microwave Systems, Effect of Microwaves on human body, RF MEMS, Microwave Imaging, etc.

Student Enrolled: 31 Students

Student Certified: 3 Students

Outcome of the Course:

The course will help the learners to identify different active and passive microwave components, understand the basic microwave parameters and analyse different Microwave transmission lines, determine the different Microwave parameters by using different measurements and testing techniques, analyse the characteristics of different microwave devices for different practical applications and compare the structural parameters, characteristics, operation, gain, output power and efficiency of various microwave sources used for different applications

Session: 2019-20 (noc19-ee57)

Summary of Concept of thermodynamics Course(noc19-me56)

Session: 2019-20

Thermodynamics is the branch of science that describes the basic laws and principles governing the processes of transfer and transformation of energy along with the changes in properties of the substances affected by such processes. The concept are formulated from observations in nature. The basic principles as corollaries of the laws are established through logical deductions following the laws. The science of thermodynamics also provides the relationships of the properties of substances for their use in determining the changes of properties in physical processes performed by the substances.

Student Enrolled: 91 Students

Certified: 4 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of physical concepts of thermodynamics also it will enable the students to get rid of usual misleading concepts in understanding the laws and their applications.

Summary of Programming in Java Course (noc19-cs84)

Session: 2019-20

Java: With the growth of Information and Communication Technology, there is a need to develop large and complex software. Further, those software should be platform independent, Internet enabled, easy to modify, secure, and robust. To meet this requirement object-oriented paradigm has been developed and based on this paradigm the Java programming language emerges as the best programming environment. Now, Java programming language is being used for mobile programming, Internet programming, and many other applications compatible to distributed systems. This course aims to cover the essential topics of Java programming so that the participants can improve their skills to cope with the current demand of IT industries and solve many problems in their own filed of studies.

Student Enrolled: 77 Students

Student Certified: 4 Students

Outcome of the Course:

Java is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc. Upon successful completion of this course, students will be Familiar with Java Programming Features, Java Programming Tools, Application versus Applet, Access Modifiers in Java, Basics of JDBC Driver and Jframe.

Summary of Course "Problem Solving through Programming in C(noc19-cs43)"

Session: 2019-20

C is a programming language that is both versatile and popular, allowing it to be used in a vast array of applications and technologies. It can, for example, be used to write the code for operating systems, much more complex programs and everything in between. Its simplicity and flexibility are largely because it can function independently from machines, which has lent itself to becoming one of the foundational programming languages in the industry.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:50

No. of Students Certified:3

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems and searching and sorting problems and also to solve simple numerical method problems.

Summary of Technical English for Engineers Course

The course covers all the areas of grammar necessary for the undergraduate students of engineering sciences. This includes topics such as reading/writing/listening comprehension, note taking, summarizing, report writing, along with elements of grammar and vocabulary. The course is designed for self-study, where participants will be required to solve regular quizzes and assignments and can also be used as an add-on to classroom teaching.

Student Enrolled: 43 Students

Certified: 3 Students

Outcomes of the Course:

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

- Understand professional writing by studying management communication contexts and genres, researching contemporary business topics, analyzing quantifiable data discovered by researching, and constructing finished professional workplace documents.
- Recognize, explain, and use the formal elements of specific genres of organizational communication: white papers, recommendation and analytical reports, proposals, memorandums, web pages, wikis, blogs, business letters, and promotional documents.
- Understand the ethical, international, social, and professional constraints of audience, style, and content for writing situations a.) among managers or co-workers and colleagues of an organization, and b.) between organizations, or between an organization and the public.

Year: 2019-20

Summary of Basic Electric Circuits

This course is mainly for undergraduate First-Year and second year Engineering students from all Specializations. This course will introduce and explain the fundamental concepts of basic electrical engineering. The basic concepts of DC and AC (Single Phase and Three Phase Circuits) network analysis, first order DC transients, steady state and phasor analysis of AC networks, series and parallel resonance and magnetic coupled circuits. This course will also cover Single Phase Transformers, Three Phase Induction Machines and DC Machines. By the end of the course, the students should be able to gather high-quality knowledge of basic electrical engineering.

Student Enrolled: 134 Student

Student Certified: 18 Student

Outcome of the Course:

- The basic concepts of electrical engineering and behavior of electrical and magnetic circuits.
- The generation of alternating voltages & other AC quantities and their supply systems.
- The principle of operation of different electrical machines with their applications.
- The design of digital and analog systems and components.
- The basics of digital communication systems and Instrumentation devices.

Summary of Digital Circuits – Online Course

Digital Circuits – Online: Digital circuits are part of any electronic design today. This also happens to be one of the core subjects for the undergraduate students in Electronics, Electrical and Computer Engineering. It forms the basis of many of the next level courses. The proposed course on digital circuits will cover all the fundamental concepts in digital design. It will primarily focus on the prescribed GATE syllabus for Electronics and Communication Engineering (ECE) specialization. The course will start with the representations of numbers – different number systems and conversion between them, representation of integer and real numbers etc. This will be followed by combinational and sequential circuit design techniques. Data converters and semiconductor memories will be covered. Microprocessor 8085 will be discussed as a complete digital system example. Designed primarily as a single course covering the digital circuits portion of GATE syllabus, the course will also be helpful for any other aspirant willing to learn digital electronics principles comprehensively in today's perspective.

Student Enrolled: 35 Students

Student Certified: 2 Students

Session: 2019-20 (noc19-ee51)

Outcome of the Course:

Through this course study students will develop ability to apply knowledge in mathematics, science, and engineering. It also demonstrates to design circuits and analyzing problems in real world so that they can develop innovative project ideas for betterment of society. It will help them to apply mathematical equations and models, basics sciences and engineering fundamentals for solving engineering problems, to design and conduct experiments in the field of electronics and communication and to participate and succeed in competitive examinations related to this subject.

Summary of Fluid Mechanics Course (noc19-ce28)

Session: 2019-20

Fluid Mechanics has a wide scope and is of prime importance in several fields of engineering and science. Present course emphasizes the fundamental underlying fluid mechanical principles and application of those principles to solve real life problems. Special attention is given towards deriving all the governing equations starting from the fundamental principle. There is a well-balanced coverage of physical concepts, mathematical operations along with examples and exercise problems of practical importance.

Student Enrolled: 107 Students

Certified: 18 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Fluid Mechanics and will be able to apply the basic principles to analyze fluid mechanical systems.

Summary of Interpersonal Skills Course

The proposed course is a program to enhance personality to deal with the various problems of a professional world. Soft skills are becoming increasingly vital to employers as it has become very competitive to survive in a business world. Be it team spirit, communication skills or being a quick-thinker, expressing and demonstrating the right soft skills can make hopeful applicants stand out from the crowd. This course will also focus on pronunciation so as to make one's speech impressive. To excel in a job one surely needs a repertoire of technical skills. This course has been designed to meet all the requirements.

Student Enrolled: 30 Students

Certified: 4 Students

Outcomes of the Course:

- At the end of this Interpersonal Skills training course your participants will be able to: Describe interpersonal skills and behaviour cycles.
- Build rapport to help build positive relationships. Use the principles of persuasion to influence others.

Year: 2019-20

Summary of Data Base Management System course(noc19-cs46)

Session: 2019-20

Databases form the backbone of all major applications today – tightly or loosely coupled, intranet or internet based, financial, social, administrative, and so on. Structured Database Management Systems (DBMS) based on relational and other models have long formed the basis for such databases. Consequently, Oracle, Microsoft SQL Server, Sybase etc. have emerged as leading commercial systems while MySQL, PostgreSQL etc. lead in open source and free domain.

Student Enrolled: 56 Students

Student Certified: 9 Students

Outcome of the Course:

DBMS is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc. Upon successful completion of this course, students will be Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing.

Summary of Course "Programming in C++ (noc19-cs38)"

2019-20

C++ is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and so on. C++ supports different ways of programming like procedural, object-oriented, functional, and so on. This makes C++ powerful as well as flexible.

C++ is still readily used in programming today. Despite the advent of popular object-oriented programming languages like Python, C++ continues to have a dedicated space in the tech world. C++ is still the go to language for solutions that need fast machine performance. AAA video games, IoT, embedded systems, and resource-heavy VR and AI applicationsall run on C or C++.

No. of Students Enrolled:116

No. of Students Certified:1

Outcome of the Course:

This course builds up on the knowledge of C programming and basic data structure (array, list, stack, queue, binary tree etc.) to create a strong familiarity with C++98 and C++03. Besides the constructs, syntax and semantics of C++ (over C), it also focuses on various idioms of C++ and attempt to go to depth with every C++ feature justifying and illustrating them with several examples and assignment problems. On the way, it illustrates various OOAD (Object-Oriented Analysis and Design) and OOP (Object-Oriented Programming) concepts.

While this course can be understood independently, it would help in developing understanding in OOP.

Summary of Programming, Data Structures and Algorithms using Python NPTEL Course(noc19-cs40)

Session: 2019-20

Programming, Data Structures and Algorithms using Python: Data Structure can be defined as the group of data elements which provides an efficient way of storing and organizing data in the computer so that it can be used efficiently. Examples of Data Structures are arrays, Linked List, Stack, Queue, etc. Data Structures are the main part of many computer science algorithms as they enable the programmers to handle the data in an efficient way. Data structures can be educated using any of the different programming languages available today. Python provides several benefits over other languages such as C++ and Java, the most important of which is that Python has a simple syntax that is easier to learn. Mostly Python language is used for introducing participants to programming and problem solving.

Student Enrolled: 61

Student Certified: 1

Outcome of the Course- This course builds up basic concepts such as conditionals, loops, functions, lists, strings, tuples searching and sorting algorithms, dynamic programming and backtracking, as well as exception handling, Python dictionaries as well as classes and objects for defining user defined data types such as linked lists and binary search trees. Participants will learn to Store data as key/value pairs using Python dictionaries, accomplish multi-step tasks like sorting or looping using tuples, create programs that are able to read and write data from files

Summary of Course "Introduction to Programming in C(noc19-cs42)"

2019-20

C is a highly efficient and simplistic programming language that was initially developed to write operating systems. Among its many benefits and features that make it so flexible and easy to use, it has low-level access to memory, a clean and concise style and a simplistic set of keywords. Additionally, the source code that is written using C for one system can work just as effectively on another operating system without experiencing any changes.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:116

No. of Students Certified:11

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems.

Summary of Course "Cloud Computing (noc19-cs64)"

2019-20

Cloud computing is a scalable services consumption and delivery platform that provides on-demand computing service for shared pool of resources, namely servers, storage, networking, software, database, applications etc., over the Internet. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly provisioned and released with minimal management effort.

Cloud computing can be deployed universally in practically no time and offer the most extreme flexibility, agility and cost-sparing IT operations to business for progressively profitable and consistent development. This, thus, is making entrepreneurs change to cloud computing for completing business activities.

No. of Students Enrolled:93

No. of Students Certified:4

Outcome of the Course:

This course will introduce various aspects of cloud computing, including fundamentals, management issues, security challenges and future research trends. This will help students and researchers to use and explore the cloud computing platforms.

Summary of Introduction to internet of things-online Course (noc19-cs65)

Session: 2019-20

Introduction to internet of things (IoT): An overview of IOTs, design of smart objects that provide collaboration and ubiquitous services will be explored. Design for longevity/energy efficiency will be highlighted. Step by step system design will be introduced. IoT design means that the focus is on singular experiences and no longer but about design principles that represent a broader ecosystem within which IoT devices function.

Student Enrolled: 42 Student

Student Certified: 5 Student

Outcome of the Course:

The IoT provides a platform that creates opportunities for people to connect these devices and control them with big data technology, which in return will promote efficiency in performance, economic benefits and minimize the need for human involvement. It's the most important development of the 21st century.So this course will help learners in getting more knowledge and job opportunities.

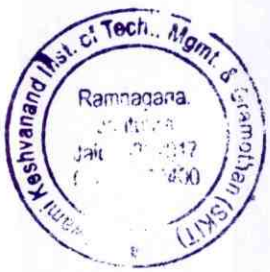
Summary of Python for data science online NPTEL Course (2019-20)

Python for data science-online: Data science is basically the science of analysing raw data and deriving insights from this data. There are multiple techniques to derive insights, a simple statistical technique, a more complicated and more sophisticated machine learning techniques etc. The key focus of data science is deriving these insights using whatever techniques we want to use.

Student Enrolled: 110

Student Certified: 4

Outcome of the Course- The course aims at equipping participants to be able to use python programming for solving data science problems, to enable to learn Data Science concepts from scratch. Participants understand important Python programming concepts such as data operations, file operations, object-oriented programming, and various Python libraries such as Pandas, Numpy, Matplotlib essential for Data Science. This course will make understand the various types of Machine Learning, Recommendation Systems and many more Data Science concepts, to help to get started with Data Science career. Participants Learn to apply data science methods and techniques and acquire analysis skills.



Summary of Ethical Hacking – Online NPTEL Course(noc19-cs68)

Session: 2019-20

Ethical Hacking - Online: Ethical hacking is very important subject in present-day context and can help individuals and organizations to adopt safe practices and usage of their IT infrastructure. So, this ethical hacking is the act of locating weaknesses and vulnerabilities in computers and information system. This is done by mimicking the behavior of a real hacker as if you are a hacker, you are trying to break into your own network, there you will get lot of information about what are the weak points in your own network.

Student Enrolled: 97

Student Certified: 5

Outcome of the Course- Participants will be able to know and implement networking, network security, cryptography, various attacks and vulnerabilities and ways to secure them etc. Participants will be able to know about ethical hacking, subnets, Routing protocols, Vulnerability assessment, System hacking, password cracking, penetration testing, Social engineering attacks, Malware threats, penetration testing by creating backdoors, Steganography, biometric authentication, network-based attacks, DNS and Email security, Elements of hardware security, Hacking web applications etc.

Summary of Course "An Introduction to Programming in C++ (noc19-cs39)"

2019-20

C++ is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and so on. C++ supports different ways of programming like procedural, object-oriented, functional, and so on. This makes C++ powerful as well as flexible.

C++ is still readily used in programming today. Despite the advent of popular object-oriented programming languages like Python, C++ continues to have a dedicated space in the tech world. C++ is still the go to language for solutions that need fast machine performance. AAA video games, IoT, embedded systems, and resource-heavy VR and AI applications all run on C or C++.

No. of Students Enrolled:201

No. of Students Certified:7

Outcome of the Course:

This course builds up on the knowledge of C programming and basic data structure (array, list, stack, queue, binary tree etc.) to create a strong familiarity with C++98 and C++03. Besides the constructs, syntax and semantics of C++ (over C), it also focuses on various idioms of C++ and attempt to go to depth with every C++ feature justifying and illustrating them with several examples and assignment problems. On the way, it illustrates various OOAD (Object-Oriented Analysis and Design) and OOP (Object-Oriented Programming) concepts.

While this course can be understood independently, it would help in developing understanding in OOP.

Summary of Technologies for Clean and Renewable Energy Production Course

The course deals with the production of energy from different fossil fuels through cleaner routes as well as from renewable resources. It is intended to help the young scientific professionals to keep their knowledge upgraded with the current thoughts and newer technology options along with their advances in the field of the utilization of different types of energy resources for cleaner energy production.

Student Enrolled: 6 Students

Certified: 2 Students

Outcomes of the Course:

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

To utilize different type of energy resources for clean energy production.

To apply various energy sources methods to obtain clean energy.

Year: 2019-20

Summary of Design of Reinforced Concrete Structures
NPTEL Course

Design of Reinforced Concrete Structures: In this course, basic elements governed by bending, shear, axial forces or combination of them are identified and are considered as building blocks of the whole structure. Different methods of design will be briefly described before introducing the limit states of collapse and serviceability. The design will be done as per IS 456:2000.

Students Enrolled: 83 Student

Students Certified: 09 Student

Outcome of the Course:

After completing this course, students will be able to know the designing of concrete components. This course will help the students in design consultancy firms and construction industries.

Summary of Consumer Psychology

Human beings have basic needs that they fulfill by making transactions in the market. Transactions mostly in the form of monetary exchange for goods and services are very basic for the survival of the human race. The present course is designed to study how consumers behave on the market and what the consequences of various behavior patterns. Additionally, the present course also looks at various psychological factors that shape the behavior and actions of the consumer in the global market.

Student Enrolled: 17 Students

Certified: 5 Students

Outcomes of the Course:

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

- Describe how theories and concepts around work–life balance affect notions of workplace stress management
- Describe how the modern workplace can both homogenize/conform behavior, and encourage individuality and personal expression.

Year: 2018-19

Summary of Fluid Mechanics Course

Fluid Mechanics is an inter-disciplinary course covering the basic principles and its applications in Civil Engineering, Mechanical Engineering and Chemical Engineering The students will have new problem-solving approaches like control volume concept and streamline patterns which are nowadays required to solve the real-life complex problems. The visualization of the fluid-flow problems will be demonstrated to enhance student's interest on the subject.

Student Enrolled: 63 Students

Certified: 5 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Fluid Mechanics and will be able to apply the basic principles to analyze fluid Mechanics systems.

Session: 2019-20(noc20-ce59)

Summary of Digital Circuits

Digital circuits are part of any electronic design today. This also happens to be one of the core subjects for the undergraduate students in Electronics, Electrical and Computer Engineering. It forms the basis of many of the next level courses. The proposed course on digital circuits will cover all the fundamental concepts in digital design. It will primarily focus on the prescribed GATE syllabus for Electronics and Communication Engineering (ECE) specialization. The course will start with the representations of numbers – different number systems and conversion between them, representation of integer and real numbers etc. This will be followed by combinational and sequential circuit design techniques. Data converters and semiconductor memories will be covered. Microprocessor 8085 will be discussed as a complete digital system example. Designed primarily as a single course covering the digital circuits portion of GATE syllabus, the course will also be helpful for any other aspirant willing to learn digital electronics principles comprehensively in today's perspective.

Student Enrolled: 68 Student

Student Certified: 14 Student

Session: 2019-20 (noc20-ee90)

Outcome of the Course:

- Gain knowledge between different types of number systems, and their conversions.
- Design various logic gates and simplify Boolean equations.
- Design various flip flops, shift registers and determining outputs.
- Design different types of counters.
- Knowledge in types of instructions and their usage.
- Write different programs using instructions of 8085 μp.
- Differentiate various interrupts with their priorities

Summary of Control systems

To provide a basic understanding of the concepts and techniques involved in designing control schemes for dynamic systems. Learning Outcomes: At the end of this course, one should possess in-depth knowledge of concepts from classical control theory, understand the concept of transfer function and use it for obtaining system response, analyze dynamic systems for their stability and performance, and design controllers (such as Proportional-Integral-Derivative) based on stability and performance requirements.

Student Enrolled: 143 Students

Student Certified: 21 Students

Session: 2019-20 (noc20-ee90)

Outcome of the Course:

- Categorize different types of system and identify a set of algebraic equations to represent and model a complicated system into a more simplified form.
- Characterize any system in Laplace domain to illustrate different specification of the system using transfer function concept.
- Interpret different physical and mechanical systems in terms of electrical system to construct equivalent electrical models for analysis.
- Employ time domain analysis to predict and diagnose transient performance parameters of the system for standard input functions.
- Formulate different types of analysis in frequency domain to explain the nature of stability of the system.

Summary Report Sample (2018-19)

Summary of Campus Recruitment Training (CRT) Program

Campus Recruitment training (CRT) at is designed to aid candidates in their preparation for Recruitment through Campuses or outside campuses (i.e On campus or off campus). Students in their final step of graduation and post-graduation looking for placement in reputed organizations can make use of this training to get trained to deliver their best in the selection processes of organizations.

Session: 2018-19

Student Enrolled: 984 Student

Student Benefited: 984 Student

After completion of CRT students will be able to-

1. Understand organizational procedures and policies as related to how the employers process for campus recruitment and employer preferences
2. Use self-assessments to identify strengths, weaknesses, transferable skills, and prime marketable characteristics.
3. Organize and write an effective cover letter and Resume.
4. Exercise judgment and logical decision making in selecting from alternative techniques for Group Discussion & Interview.

Infosys Campus Connect Foundation Program (Rollout)

Campus Connect is an Industry-Academia collaboration program to align engineering student competencies with industry needs, Launched by Infosys in 2004. Campus Connect is a unique academia-industry initiative to "architect the education experience". The students will have better exposure to industry requirements. To build a sustainable partnership with engineering education institutions in India and abroad for mutual benefit, producing "industry ready" recruits.

Objectives for Infosys Campus Connect Programme

The foundation program is aimed at imparting the necessary knowledge and skills to a fresh entrant to take up the challenges of a project work. The main objective of Campus Connect is to evolve a model through which Infosys and academia:

- Can partner for competitiveness.
- Can enhance the pool of highly capable talent for growth requirements in the Information Technology space.
- Can enhance the quality and quantity of IT education.
- Sustain the growth of the IT industry itself.
- Increase the employability of students.
- Achieve a high-quality, constant product with the help of our faculty members.
- The Foundation Program aligns technical competency to a student's individual needs.
- The methodology goes beyond teaching or beyond curriculum.
- It comprises real-life case studies, and insights into application of technology.
- These unique teaching aids go a long way in ensuring that the students are "industry ready."

Campus Connect equips graduates not only in computer science and software engineering, but also helps them apply their learning to practical situations, with special emphasis on teamwork, project management, cross functional networking, and effective communication.

The purpose of this Campus Connect Foundation Program_is to bridge the gap commonly noticed in engineering students in the areas of communication, teamwork, corporate etiquette, and corporate work culture.

Benefits of the programme

The main benefit to the student is enhancing employability and increasing the industry

readiness for the IT industry. Outstanding performance in the Infosys screening examination will also make such students eligible for early association with real-life projects, if applicable, and other special opportunities.

Session: 2018-19

Student Enrolled: 336

Summary of Latex Spoken Tutorial Course

This course takes a suitably prepared computer file and converts it to a form which may be printed on many kinds of printers, including dot-matrix printers, laser printers and high-resolution typesetting machines. LaTeX is a set of macros for TeX that aims at reducing the user's task to the sole role of writing the content, LaTeX taking care of all the formatting process. LaTeX users benefit from automating many of the tedious processes involved in writing a professional publication. LaTeX allows to manage references, figures, tables, footnotes, formatting, mathematical equations, algorithms, scientific proofs, and more in a programmatic fashion that provides benefits far exceeding that of word processing software.

Session: 2018-19

Student Enrolled: 169 Student

Student Certified: 8 Student

Outcome of the Course:

1. Typeset mathematical formulae using LaTeX.
2. Use the preamble of LaTeX file to define document class and layout options.
3. Use nested list and enumerate environments within a document.
4. Use tabular and array environments within LaTeX document.
5. Use various methods to either create or import graphics into a LaTeX document.
6. Use the beamer package to create presentations.
7. Define and use new commands within LaTeX.
8. Use Theorem, Corollary, and other environments.
9. Use BibTeX to maintain bibliographic information and to generate a bibliography for a particular document.

Summary of LaTeX Spoken Tutorial Course (2018-19)

LaTeX: LaTeX is most used to create documents for academia, such as academic journals. In LaTeX, the author does not stylize the document directly, like in a word processor such as Microsoft Word, LibreOffice Writer, or Apple Pages; instead, they write code in plain text that must be compiled to produce a PDF document.

Student Enrolled: 160

Student Certified: 85

Outcome of the Course

Latex is used to write documents containing mathematical formulas, articles in different journal styles, drawing graphs and figures, preparing presentation, write mathematical documents etc. So, this course is also helpful creating documents using plain text, stylized using markup tags, similar to HTML/CSS or Markdown.

Summary of C Spoken Tutorial Course (2018-19)

This C programming course provides a comprehensive introduction to the ANSI C language, emphasizing portability and structured design. Introduced to all major language elements including fundamental data types, flow control, and standard function libraries. Thorough treatment is given to the topics of string and character manipulation, dynamic memory allocation, standard I/O, macro definition, and the C runtime library. The course explains the use of aggregate structures, unions, and pointers. Structured programming constructs and varargs functions are also covered. Emphasis is given to the processing of command line arguments and environment variables.

Student Enrolled: 146 Student

Student Certified: 45 Student

Outcome of the Course

Able to implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems. Demonstrate an understanding of computer programming language concepts. To be able to develop C programs on linux platform. Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage. Able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures.

Summary of Scilab Spoken Tutorial Course (2018-19)

Scilab is a programming language associated with a rich collection of numerical algorithms covering many aspects of scientific computing problems. The Scilab language is meant to be extended so that user-defined data types can be defined with possibly overloaded operations. Scilab users can develop their own module so that they can solve their particular problems. The Scilab language allows to dynamically compile and link other languages such as Fortran and C: this way, external libraries can be used as if they were a part of Scilab built-in features. Scilab provides many graphics features, including a set of plotting functions, which allow to create 2D and 3D plots as well as user interfaces. The Xcos environment provides an hybrid dynamic systems modeler and simulator.

Student Enrolled: 91 Student

Student Certified: 15 Student

Outcome of the Course:

1. Understand the need for simulation/implementation for the verification of mathematical functions.
2. Understand the main features of the SCILAB program development environment to enable their usage in the higher learning.
3. Implement simple mathematical functions/equations in numerical computing environment such as SCILAB.
4. Interpret and visualize simple mathematical functions and operations thereon using plots/display.
5. Analyze the program for correctness and determine/estimate/predict the output and verify it under simulation environment using SCILAB tools.

Summary of Linux Spoken Tutorial Course (2018-19)

Linux: Linux is a community of open-source Unix like operating systems that are based on the Linux Kernel. It is used in other machines like servers, mainframe computers, supercomputers, embedded systems like routers, automation controls, televisions, digital video recorders, video game consoles, smartwatches, etc. Android (operating system) is based on the Linux kernel that is running on smartphones and tablets. Due to android Linux has the largest installed base of all general-purpose operating systems. Linux is generally packaged in a Linux distribution.

Student Enrolled: 285

Student Certified: 256

Outcome of the Course

Linux is open-source software. The code used to create Linux is free and available to the public to view, edit, and for users with the appropriate skills to contribute to. This course will prepare students to work comfortably and productively in open-source development communities and Linux environments, to learn to develop software for Linux/UNIX systems, to understand the inner workings of UNIX-like operating systems etc.

Summary of Java Spoken Tutorial Course (2018-19)

Java: With the growth of Information and Communication Technology, there is a need to develop large and complex software. Further, that software should be platform independent, Internet enabled, easy to modify, secure, and robust. To meet this requirement object-oriented paradigm has been developed and based on this paradigm the Java programming language emerges as the best programming environment. Now, Java programming language is being used for mobile programming, Internet programming, and many other applications compatible to distributed systems. This course aims to cover the essential topics of Java programming so that the participants can improve their skills to cope with the current demand of IT industries and solve many problems in their own filed of studies.

Student Enrolled: 417

Student Certified: 343

Outcome of the Course-

Java is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc. Upon successful completion of this course, students will be Familiar with Java Programming Features, Java Programming Tools, Application versus Applet, Access Modifiers in Java, Basics of JDBC Driver and Jframe.

Summary of Deep Learning Course(noc18-cs41)

Session: 2018-19

Deep Learning has received a lot of attention over the past few years and has been employed successfully by companies like Google, Microsoft, IBM, Facebook, Twitter etc. to solve a wide range of problems in Computer Vision and Natural Language Processing. Deep learning is an artificial intelligence (AI) function that imitates the workings of the human brain in processing data and creating patterns for use in decision making. Deep learning is a subset of machine learning in artificial intelligence that has networks capable of learning unsupervised from data that is unstructured or unlabeled.

Student Enrolled: 6 Student

Student Certified: 1 Student

Outcome of the Course:

This course will help in

- Identify the characteristics of datasets and compare the trivial data and big data for various applications.
- To select and implement machine learning techniques and computing environment that are suitable for the applications under consideration.
- To solve problems associated with batch learning and online learning, and the big data characteristics such as high dimensionality, dynamically growing data and in particular scalability issues.

Summary of Engineering Thermodynamics Course (noc 18- ae05)

Session: 2018-19

This course introduces the most powerful engineering principles-Thermodynamics: the science of energy and its transformation from one form to another form. The objective of this course is to introduce systematic different tools needed to analyze energy systems from various daily lives to large scale engineering applications.

Student Enrolled: 6 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Engineering Thermodynamics and will be able to apply the basic principles to analyze Engineering Thermodynamics systems.

Summary of "The Joy of Computing using Python" NPTEL Course (noc18-cs35)

Session: 2018-19

Python

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It provides code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python lets you work quickly and integrate systems more efficiently. At present Python is being used in web development, machine learning applications, along with all cutting edge technology in software industry. Python programming language is very well suited for beginners, also for experienced programmers with other programming languages like C++ and Java.

Student Enrolled: 25

Student Certified: 2

Outcome of the Course:

Python programming is a general-purpose, and used in almost all fields like data science, web development, system automation and administration, basic game development, general and application-specific scripting etc. Additionally at present, Python is widely used by a number of big companies like Google, Pinterest, Instagram, Disney, Yahoo!, Nokia, IBM, and many others. The Raspberry Pi, which is a minicomputer relies on Python. So this course will help learners in getting more job opportunities.

Summary of Introduction to Machine Learning
Course (noc18-cs40)

Session: 2018-19

Machine learning (ML): ML is the study of computer algorithms that improve automatically through experience and by the use of data.[1] It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so. Machine learning algorithms are used in a wide variety of applications, such as in medicine, email filtering, speech recognition, and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks

Student Enrolled: 20 Student

Student Certified: 2 Student

Outcome of the Course:

New techniques in the field are evolving rapidly and expanded the application of machine learning to nearly limitless possibilities. Industries that depend on vast quantities of data—and need a system to analyze it efficiently and accurately, have embraced machine learning as the best way to build models, strategize, and plan. Machine learning models learn, identify patterns, and make decisions with minimal intervention from humans. Ideally, machines increase accuracy and efficiency and remove (or greatly reduce) the possibility of human error.

Summary of Course "Introduction to Programming in C(noc18-cs33)"

Session: 2018-19

C is a highly efficient and simplistic programming language that was initially developed to write operating systems. Among its many benefits and features that make it so flexible and easy to use, it has low-level access to memory, a clean and concise style and a simplistic set of keywords. Additionally, the source code that is written using C for one system can work just as effectively on another operating system without experiencing any changes.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:32

No. of Students Certified:1

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems.

Summary of Course "Programming in C++ (noc18-cs32)"

Session: 2018-19

C++ is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and so on. C++ supports different ways of programming like procedural, object-oriented, functional, and so on. This makes C++ powerful as well as flexible.

C++ is still readily used in programming today. Despite the advent of popular object-oriented programming languages like Python, C++ continues to have a dedicated space in the tech world. C++ is still the go to language for solutions that need fast machine performance. Video games, IoT, embedded systems, and resource-heavy VR and AI applicationsall run on C or C++.

No. of Students Enrolled: 38

No. of Students Certified: 1

Outcome of the Course:

This course builds up on the knowledge of C programming and basic data structure (array, list, stack, queue, binary tree etc.) to create a strong familiarity with C++98 and C++03. Besides the constructs, syntax and semantics of C++ (over C), it also focus on various idioms of C++ and attempt to go to depth with every C++ feature justifying and illustrating them with several examples and assignment problems. On the way, it illustrate various OOAD (Object-Oriented Analysis and Design) and OOP (Object-Oriented Programming) concepts.

While this course can be understood independently, it would help in developing understanding in OOP.

Summary of Programming, Data Structures and Algorithms using Python NPTEL Course(noc18-cs34)

Session: 2018-19

Programming, Data Structures and Algorithms using Python: Data Structure can be defined as the group of data elements which provides an efficient way of storing and organizing data in the computer so that it can be used efficiently. Examples of Data Structures are arrays, Linked List, Stack, Queue, etc. Data Structures are the main part of many computer science algorithms as they enable the programmers to handle the data in an efficient way. Data structures can be educated using any of the different programming languages available today. Python provides several benefits over other languages such as C++ and Java, the most important of which is that Python has a simple syntax that is easier to learn. Mostly Python language is used for introducing participants to programming and problem solving.

Student Enrolled: 42

Student Certified: 5

Outcome of the Course- This course builds up basic concepts such as conditionals, loops, functions, lists, strings, tuples searching and sorting algorithms, dynamic programming and backtracking, as well as exception handling, Python dictionaries as well as classes and objects for defining user defined data types such as linked lists and binary search trees. Participants will learn to Store data as key/value pairs using Python dictionaries, accomplish multi-step tasks like sorting or looping using tuples, create programs that are able to read and write data from files

Summary of Laws of thermodynamics Course(noc18-me45)

Session: 2018-19

Thermodynamics is the branch of science that describes the basic laws and principles governing the processes of transfer and transformation of energy along with the changes in properties of the substances affected by such processes. The laws are formulated from observations in nature. The basic principles as corollaries of the laws are established through logical deductions following the laws. The science of thermodynamics also provides the relationships of the properties of substances for their use in determining the changes of properties in physical processes performed by the substances.

Student Enrolled: 53 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of physical concepts of thermodynamics also it will enable the students to get rid of usual misleading concepts in understanding the laws and their applications.

Summary of Introduction to Remote Sensing

The course includes principles of remote sensing technology with an overview of remote sensing, Geographic Phenomena, Data Inputting and Editing in remote sensing, remote sensing data Models, Geographic Data Standards and Policies, Topology and Spatial Relationship, Spatial Data Analysis, Spatial Data Quality, Spatial Data Errors, Map Projection and Advanced Geospatial Modeling. The free and open-source software will be used as a platform for demonstrations and development.

Student Enrolled: 13 Students

Certified: 1 Students

Outcomes of the Course:

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

- Identify specific data and methodologies for effective mapping and evaluation of natural resources.
- Develop geospatial models and tools to address the social and engineering problems.

Year: 2018-19

Summary of Housing Policy & Planning (noc19-ar04)

Housing for All' is a primary aim of Government of India for long. It has formulated Housing for All mission with a Sub-mission focused on 'technology' to enhance the social housing delivery. Government has also been creating an enabling environment for private players through bringing reforms in land and financial sectors to increase overall housing supply. As a result, housing market is facing a constant change. Under this changed circumstances it is challenging for professionals and academicians to deliver in the field of housing development without the sound knowledge of the fast-changing housing policy dynamics and planning practice. The present course covers contemporary housing policy, reforms (land and finance), planning and strategy intervention at the city and sub-regional level. The course is highly interactive and full of relevant cases and best practices, course materials which are highly useful for students at bachelor's, master's & PhD degree, academicians, consultants/professionals as well as policy makers at various levels.

Student Enrolled: 2 Students

Certified: 1 Students

Outcomes of the Course:

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

- Identify key concepts of housing studies and frameworks behind housing policy formation.
- Acquire thorough knowledge of variety of housing interventions and multiplicity of possible approaches for solving the housing question.
- Learn essentials of managing a slum/housing redevelopment exercise.

Year: 2018-19

Summary of Infrastructure Planning and Management

This course attempts to introduce students to 'real world' risks and challenges in managing infrastructure. After a brief introduction to the infrastructure planning process as well as the state of infrastructure across sectors in India, we systematically look at various risks that plague infrastructure projects. We then look at a variety of novel solutions or fixes that can help us execute infrastructure projects better. The curse is replete with real-world case studies and guest lectures to ensure that what is being discussed is practically applicable.

Student Enrolled: 21 Students

Certified: 1 Students

Outcomes of the Course:

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

- Achieve Knowledge of Planning and development of problem-solving skills in management.
- Understand the principles of financial fundamentals
- Understand the concepts of financial and Economics management.

Year: 2018-19

Summary of Digital Land Surveying And Mapping (DLS & M)

The objective of the course is to provide basics of digital surveying and mapping of earth surface using total station, GPS and mapping software. The course starts with introduction to land surveying followed by fundamentals of total station and its working & measurements for land surveying. Then, fundamentals, working & measurements using GPS for land surveying will be discussed. Followed by mapping fundamentals, digital surveying procedure, working, data reduction etc. Finally, the course will deals with working and demonstration of a digital land surveying and mapping of an area. This course will uncover all the major topics in pericyclic reactions and organic photochemistry. In addition to lectures there will be tutorial sessions and assignments in this course.

Student Enrolled: 24 Students

Certified: 1 Students

Year: 2018-19

Summary of Electric Vehicles - Part 1

This course will be a first level course on electric vehicle. Students will be able to understand the operation of battery driven electric vehicle. The course will start with introduction section which will enable the students to understand the focus areas that come under the umbrella of electric vehicles. Then the course will start covering this focus areas one by one such as vehicle dynamics, Motors, Power Electronics, Batteries, Charging etc. The most important part of this course will be that each topic will be analysed and demonstrated through Matlab Simulink, so that the grip of the subject will be strong and the knowledge acquired will be useable in real time applications.

Student Enrolled: 28 Students

Certified: 3 Students

Outcomes of the Course:

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

- Explain the basics of electric and hybrid electric vehicles, their architecture, technologies and fundamentals
- Analyse the use of different power electronics devices and electrical machines in hybrid electric vehicles.

Year: 2018-19

Summary of Embedded System Design with ARM

This course will discuss about the basic concepts of embedded system design, with particular emphasis on hands-on and demonstration sessions on system design using ARM microcontrollers. Keeping in view of the recent developments, this course will be based on state-of-the-art microcontroller boards and programming environments. This course will also help the participants to understand the developmental aspects of Internet of Things (IoT) based designs. Starting from the basics, the participants will be introduced to various interfacing issues with sensors and actuators. It is highly recommended that the participants procure some of the low-cost microcontroller development boards and carry out the experiments that would be demonstrated.

Student Enrolled: 9

Student Certified: 1

Outcome of the Course:

Learning out Embedded Systems with ARM Processor will give the skills to design and manufacture embedded system products of the future which will help participants towards better employability. It provides experience to integrate hardware and software for microcontroller applications systems.

Summary of Architecture conservation and Historic prevention NPTEL Course

Session: 2018-19

Architecture conservation and Historic prevention: This course is designed to address historic preservation and conservation as an approach that establishes a link between past, present, and future. Idea is to familiarize the course participants with issues and challenges of heritage areas, about opportunities of heritage structures, sites, precincts and areas, of the need of integrating development with heritage preservation. Evolution of conservation movement, changing concepts and role and policies of various agencies involved in the field of conservation are discussed.

Students Enrolled: 01 Student

Students Certified: 01 Student

Outcome of the Course:

After completing this course, students will be able to understand the importance of establishing significance of heritage structures through examples. Along with exposure to management and presentation of heritage buildings and sites, the importance of community participation in the field of heritage conservation is also understand by students.

Summary of Machine Learning, ML
Course (noc19-cs35)

Session: 2018-19

Machine learning (ML): ML is the study of computer algorithms that improve automatically through experience and by the use of data.[1] It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so. Machine learning algorithms are used in a wide variety of applications, such as in medicine, email filtering, speech recognition, and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks

Student Enrolled: 41 Student

Student Certified: 1 Student

Outcome of the Course:

New techniques in the field are evolving rapidly and expanded the application of machine learning to nearly limitless possibilities. Industries that depend on vast quantities of data—and need a system to analyze it efficiently and accurately, have embraced machine learning as the best way to build models, strategize, and plan. Machine learning models learn, identify patterns, and make decisions with minimal intervention from humans. Ideally, machines increase accuracy and efficiency and remove (or greatly reduce) the possibility of human error.

Summary of Plastic Waste Management

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

Student Enrolled: 22 Students

Certified: 2 Students

Outcomes of the Course:

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

- Discuss the solid waste collection systems, route optimization techniques
- Explain the operation, and maintenance of sanitary landfill.
- Conclude the recent trends in reuse of solid waste

Year: 2018-19

Summary of Multivariable Calculus

This course is a basic course offered to UG and PG students of Engineering/Science background. It contains various topics related to the calculus of the functions of two or more variables. This course includes topics like differentiation and integration of the functions of two or more variables together with their various applications. This course also includes the calculus of vector functions with different applications.

Student Enrolled: 3 Students

Certified: 1 Students

Outcomes of the Course:

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

- Able to set up and compute multiple integrals in rectangular, polar, cylindrical and spherical coordinates.
- Able to set up and solve optimization problems involving several variables, with or without constraints.
- Able to change variables in multiple integrals

Year: 2018-19

Summary of Basic Linear Algebra

Linear Algebra is a basic course for students intended to go for Engineering sudies and higher studies in Mathematics. We will cover the basic tools needed in these brances.

Student Enrolled: 2 Students

Certified: 2 Students

Outcomes of the Course:

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

- Analyze the solution set of a system of linear equations.
- Express some algebraic concepts (such as binary operation, group, field).
- Do elemantary matrix operations.
- Express a system of linear equations in a matrix form.
- Do the elementary row operations for the matrices and systems of linear equations.
- Investigate the solition of a system using gauss elimination.

Year: 2018-19

Summary of Engineering Mechanics - Statics and Dynamics

Static and dynamical mechanical systems are the heart of all engineering today. The static systems range from bridges, load bearing members of roofs to fasteners and bolts. Dynamical systems are also ubiquitous in the form of machines which convert electrical energy to mechanical energy. Understanding the equations governing these static and dynamical systems is at the heart of this course. During this course, we will touch upon the theoretical tools that we have available to us in order to be able to analyse these systems. The world around us is full of engineered systems, such as machines, automobiles, bridges and buildings. The objective of this course is to present the basic principles of dynamics and help develop proficiency in applying these principles to formulate and solve dynamics problems. We will also study applications of dynamics concepts to modeling engineered machines.

Student Enrolled: 60 Students

Certified: 3 Students

Outcomes of the Course:

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

- Solve for the resultants of any force system and determine equivalent force system.
- Determine displacement of completely constrained bodies by principles of virtual work and solve the mechanics problems associated with friction force..
- Find the velocity and acceleration of rigid bodies in rectilinear and curvilinear motion.

Year: 2018-19

Summary of Product Design and Development Course (noc19-me21)

Session: 2018-19

It has been established worldwide that the most successful economies are based on innovation and creativity led entrepreneurship. The government is focusing on putting concerted efforts to produce job creators.

The Product Design and Development course is conceptualized and planned in such a way that it helps both job creators as well as job seekers. The main objective of the course is to acquaint the learners/students with the practical knowledge regarding conceptualization, design, and development of a new product. The need of a new product, the product life cycle, the product design process, the application of Value Engineering principles in product design, various product design tools such as CAD, DFM, DFA and DFMA have been explained with relevant and specific examples/ case studies. The concept of Ergonomics in context of the product design has been explained with the help of case studies. The fundamental concept of Rapid Prototyping as well the working principles of the basic rapid prototyping techniques has also been explained.

Student Enrolled: 04 Students

Certified: 01 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Product Design and Development and will be able to apply the basic principles to analyze Product Design and Development systems.

Summary of Product Design and Manufacturing Course (noc19-me23)

Session: 2018-19

This course presents an overview of the product design and development process, along with the manufacturing systems aspects. The concepts Design for Manufacturing, Assembly, and Environment, and analytical tools for development, costing and manufacturing would help the students and practitioners learn to conceptualize, design, and manufacture competitively-priced quality products. Reverse Engineering, Prototyping and Simulation using soft tools are also incorporated make the students learn the advanced methods in manufacturing.

Student Enrolled: 04 Students

Certified: 01 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Product Design and Manufacturing and will be able to apply the basic principles to analyze Product Design and Manufacturing systems.

Summary of Fundamental of Semiconductor Devices

Session: 2018-19

This course seeks to cover the basics of semiconductor devices including the physics of energy bands, doping and carrier statistics and transport leading up to the understanding of common semiconductor devices including p-n junctions and their applications, BJTs and MOSFETs. The course will also give a flavor of the basics of compound semiconductors and their devices, and also touch base with opto-electronic devices such as solar cells, photodetectors and LEDs. The course will ensure that undergraduates, college teachers and other interested audience with no background in semiconductors are able to grasp the content. In parallel, the course will consistently seek to engage the audience by giving real-life examples pertaining to the content, and also seek to calibrate the content with respect to practical and commercial technologies which are all around us and which use semiconductor devices.

Student Enrolled: 19 Student

Student Certified: 1 Student

Outcome of the Course

After this course the student will be able to understand the basics of semiconductors. He will be able to design various diode circuits like clipper clamper etc, he will be able to understand the amplification behavior of transistor, mosfet and other device used in EDC.

Summary of Power System Engineering

Session: 2018-19

This course is mainly for undergraduate third-year as well as fourth year Electrical Engineering students, which will introduce and explain the fundamental concepts in the field of electrical power system engineering. The basic concepts of underground cables, overhead line insulators, transient over voltages and insulation coordination will be covered in detail. In addition to that, corona, sag and tension of transmission line will also be covered. In this course, distribution load flow, voltage stability analysis and application of capacitors in distribution networks will also be covered. Load frequency control of isolated and interconnected power system will be covered in depth. Unit commitment will also be covered. By the end of the course, the students should be able to gather high-quality knowledge of electrical power system engineering in the above mentioned fields.

Student Enrolled: 02 Student

Student Certified: 02 Student

Outcome of the Course:

- Depreciation, power plant cost analysis and economics in plant selection.
- Incremental cost, scheduling considering transmission losses, Methods of loading turbo generators and unit commitment
- Base load peak load operation, coordination equations, scheduling methods and applications.
- Synchronizing current and power and effect of change in excitation, load sharing, sharing of load currents.
- Linear and nonlinear break even, min cost analysis and Concepts of physical and financial efficiencies of electrical goods.

Summary of Human Behaviour

We as intelligent beings have always wondered why we do what we do. The most interesting knowledge that humans beings would kill to possess would be the knowledge to control other people. The basic premise of being human is individual difference (we are all different). One science that helps people in understanding other people and scientifically predicting their actions is the science of psychology. In the present course, I will make an attempt to simplify the science of human behavior.

Student Enrolled: 11 Students

Certified: 1 Students

Outcomes of the Course:

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

- Describe how theories and concepts around work–life balance affect notions of workplace stress management
- Describe how the modern workplace can both homogenize/conform behavior, and encourage individuality and personal expression.

Year: 2018-19

Summary of Emotional Intelligence

"Intelligence quotient (IQ) gets you hired but emotional quotient (EQ) gets you promoted". This popular quote by Times magazine during late nineties has made the concept of emotional intelligence more popular among people by highlighting its multiple implications and applications. The uses and utility of emotional intelligence at home, school and workplace have benefited thousands in many disciplines. This course is designed to sensitize the participants about the concept, theory and applications of emotional intelligence. The participants will get to know the added advantage of EQ the software of the brain over the hardware (EQ). This programme will also explore how our hearts rule over our heads for creative creation. It will also focus on how various principles of emotional intelligence guide us in different contexts of life. The awareness about the credo of emotional intelligence will develop insights into self-regulation and realization of one's optimum potentials for better performance. The participants will come to know about many unknowns of life, which will further help them to enhance their awareness to be effective on their roles. The course will offer useful lessons with the help of practical exercises, games, audio-visual instruments, case studies, classroom interaction to show the road map how to foster emotional intelligence in organisation for achieving health, happiness, and optimal performance at work.

Student Enrolled: 4 Students

Certified: 1 Students

Outcomes of the Course:

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

- Be able to relate more effectively to their colleagues and to others.
- Know how to communicate in an emotionally intelligent way.
- Understand how to demonstrate empathy in a wide range of situations.
- Be aware how their emotions affect their behaviour and performance.

Year: 2018-19

Summary of Manufacturing Process Technology Course

This is an introductory level course in Manufacturing Systems Technology and management. For most enterprises, the long term goal is to stay in business, grow and make profits. This is particularly true for manufacturing enterprises, which must understand the dynamic changes that are taking place in business environment and are flexible enough to change at every level.

Student Enrolled: 63 Students

Certified: 20 Students

Outcomes of the Course:

This course is an introductory course for engineering professionals who would like to take up careers in manufacturing and also for professionals who are already in manufacturing careers and would like to see the technological changes that manufacturing paradigm has witnessed.

Year: 2018-19

Summary of Concept of thermodynamics Course(noc19-me13)

Session: 2018-19

Thermodynamics is the branch of science that describes the basic laws and principles governing the processes of transfer and transformation of energy along with the changes in properties of the substances affected by such processes. The concept are formulated from observations in nature. The basic principles as corollaries of the laws are established through logical deductions following the laws. The science of thermodynamics also provides the relationships of the properties of substances for their use in determining the changes of properties in physical processes performed by the substances.

Student Enrolled: 4 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of physical concepts of thermodynamics also it will enable the students to get rid of usual misleading concepts in understanding the laws and their applications.

Summary of Course "Problem Solving through Programming in C(noc19-cs06)"

Session: 2018-19

C is a programming language that is both versatile and popular, allowing it to be used in a vast array of applications and technologies. It can, for example, be used to write the code for operating systems, much more complex programs and everything in between. Its simplicity and flexibility are largely because it can function independently from machines, which has lent itself to becoming one of the foundational programming languages in the industry.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:58

No. of Students Certified:7

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems and searching and sorting problems and also to solve simple numerical method problems.

Summary of Introduction to Fluid Mechanics Course (noc19-me15)

Session: 2018-19

Fluid Mechanics has a wide scope and is of prime importance in several fields of engineering and science. Present course emphasizes the fundamental underlying fluid mechanical principles and application of those principles to solve real life problems. Special attention is given towards deriving all the governing equations starting from the fundamental principle. There is a well-balanced coverage of physical concepts, mathematical operations along with examples and exercise problems of practical importance.

Student Enrolled: 62 Students

Certified: 9 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Fluid Mechanics and will be able to apply the basic principles to analyze fluid mechanical systems.

Summary of Better Spoken English

This course aims to introduce learners to the dynamics of effective spoken communication by establishing speaking as an autonomous medium with a distinctive vocabulary, syntax, structure, style and register. It will enable learners to participate in one-to-one interactions, in small groups and before a group. Learners are expected to master the fundamentals of speaking such as vocabulary, body language, pronunciation, and basic conversation skills before they move on to more advanced activities such as appearing in interviews, making formal presentations and participating in meetings.

Student Enrolled: 27 Students

Certified: 3 Students

Outcomes of the Course:

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

- Students will heighten their awareness of correct usage of English grammar in writing and speaking
- Students will improve their speaking ability in English both in terms of fluency and comprehensibility
- Students will give oral presentations and receive feedback on their performance

Year: 2018-19

Summary of Principles of communication system – I

Course Code: noc19-ee08

Year: 2018-19

Duration of course: 12 weeks

Course Objective: This course covers fundamental concepts of communication systems, which are essential for the understanding of advanced courses in analog and digital communication systems. Beginning with various basic tools such as Fourier Series/ Transform, the course will also cover several important modulation techniques such as Amplitude Modulation, Frequency Modulation, Phase Modulation etc. Sampling process and Quatization, including Nyquist criterion and reconstruction of the original signal from the sampled signal will be dealt with in the later parts of the course. Further, the course will also cover concepts in probability and random variables/ processes and is designed to serve as a basic course towards introducing the students to various aspects of probability from the perspective of modern digital and wireless communications.

Student Enrolled: 49

Student Certified: 4

Learning Outcomes:

On successful completion of this course students will be able to analyse communication systems in both the time and frequency domains, Describe the principles of amplitude modulated and angle modulated communication systems and be able to analyse their performance in the presence of noise. Also students will be able to describe the principles of various digital modulation systems and their properties including bandwidth, channel capacity, transmission over bandlimited channels, inter-symbol interference (ISI), demodulation methods, and error performance in the presence of noise.

Summary of Control Engineering Course noc19-ee30

Session: 2018-19

This course shall introduce the fundamentals of modeling and control of linear time invariant systems; primarily from the classical viewpoint of Laplace transforms and a brief emphasis on the state space formulation as well. The course will be useful for students from major streams of engineering to build foundations of time/frequency analysis of systems as well as the feedback control of such systems. The 11th module of the course will cover a detailed application of filter design in the field of navigation and human movement (gait). Students will be able to design their very own basic navigational system using inertial sensors and microcontrollers.

Student Enrolled: 50 Student

Student Certified: 01 Student

Outcome of the Course:

At the end of this course, one should possess in-depth knowledge of concepts from classical control theory, understand the concept of transfer function and use it for obtaining system response, analyse dynamic systems for their stability and performance, and design controllers (such as Proportional-Integral-Derivative) based on stability and performance requirements.

Summary of Control Engineering Course noc18-ee20

Session: 2018-19

This course shall introduce the fundamentals of modeling and control of linear time invariant systems; primarily from the classical viewpoint of Laplace transforms and a brief emphasis on the state space formulation as well. The course will be useful for students from major streams of engineering to build foundations of time/frequency analysis of systems as well as the feedback control of such systems. The 11th module of the course will cover a detailed application of filter design in the field of navigation and human movement (gait). Students will be able to design their very own basic navigational system using inertial sensors and microcontrollers.

Student Enrolled: 15 Student

Student Certified: 02 Student

Outcome of the Course:

At the end of this course, one should possess in-depth knowledge of concepts from classical control theory, understand the concept of transfer function and use it for obtaining system response, analyse dynamic systems for their stability and performance, and design controllers (such as Proportional-Integral-Derivative) based on stability and performance requirements.

Summary of Signal and System Course (noc19-ee07)

Session: 2018-19

The course presents and integrates the basic concepts for both continuous-time and discrete-time signals and systems. Signal and system representations are developed for both time and frequency domains. These representations are related through the Fourier transform and its generalizations, which are explored in detail. Filtering and filter design, modulation, and sampling for both analog and digital systems, as well as exposition and demonstration of the basic concepts of feedback systems for both analog and digital systems, are discussed and illustrated.

Student Enrolled: 46 Student

Student Certified: 4 Student

Outcome of the Course:

- Be familiar with commonly used signals such as the unit step, ramp, impulse function, sinusoidal signals and complex exponentials.
- Be able to classify signals as continuous-time vs. discrete-time, periodic vs. non-periodic, energy signal vs. power signal, odd vs. even, conjugate symmetric vs anti-symmetric
- Be able to describe signals mathematically and understand how to perform mathematical operations on signals.
- Be able to compute the Fourier series or Fourier transform of a set of well-defined signals from first principles. Further, be able to use the properties of the Fourier transform to compute the Fourier transform (and its inverse) for a broader class of signals.
- Understand the application of Fourier analysis to ideal filtering.

Summary of Microprocessors and Microcontrollers Course (noc19-ee11)

Session: 2018-19

Microprocessors are used extensively in the design of any computing facility. It contains units to carry out arithmetic and logic calculations, fast storage in terms of registers and associated control logic to get instructions from memory and execute them. A number of devices can be interfaced with them to develop a complete system application. On the other hand, microcontrollers are single chip computers, integrating processor, memory and other peripheral modules into a single System-on-Chip (SoC). Apart from input-output ports, the peripherals often include timers, data converters, communication modules, and so on. The single chip solution makes the footprint of the computational element small in the overall system package, eliminating the necessity of additional chips on board. However, there exists a large range of such products. Microcontrollers like 8051, PIC belong to this category. On the other hand, advanced microcontrollers are often much more powerful, comparable to the very advanced microprocessors. The AVR and ARM processors are of this category.

Student Enrolled: 35 Students

Student Certified: 4 Students

Outcome of the Course:

The objective of this course is to become familiar with the architecture and the instruction set of an Intel microprocessor and microcontroller. Concept of microprocessor and microcontroller used to interface memory and peripherals for system level interfacing design and also understand the concept of memory organization and Direct Memory Access. Design the various types of digital and analog interfaces by using assembly level language programming.

Summary of Digital Electronic Circuits Course (noc19-ee09)

Session: 2018-19

There is a notable increase in the use of the word 'digital' for products and services that are becoming part of our everyday life. Examples are digital camera, digital watch, digital weighing machine, digital signature, digital payment, digital art and so on. The digital prefix associates a term with digital technology and is considered a step up in the delivered performance at a given cost. The world of digital provides easy storage and reproduction, immunity to noise and interference, flexibility in processing, different transmission options, and very importantly, inexpensive building blocks in the form of integrated circuits. Digital systems represent and manipulate digital signals. Such signals represent only finite number of discreet values. A signal can be discreet by nature whereas, a continuous signal can be discretized for digital processing and then converted back. Manipulation and storage of digital signal involves switching. This switching is done through electronic circuits. Basic gates made from electronic circuits are primary building blocks of digital systems.

Student Enrolled: 149 Student

Student Certified: 7 Student

Outcome of the Course:

The course will help the learners to have a thorough understanding of the fundamental concepts and techniques used in digital electronics. They get the ability to understand, analyze and design various combinational and sequential circuits which will develop skills in them to build, and troubleshoot digital circuits. They also get the ability to identify basic requirements for a design application and propose a cost effective solution.

Summary of Analog Circuits NPTEL Course (noc19-ee10)

Session 2018-19

This course is an introductory course on Analog Circuits. It covers the basic components and methodologies used for Analog Design. Most of the portion deals with OPAMP based circuits. In this course some BJT and MOSFET based circuits are also discussed.

Student Enrolled: 58 Student

Student Certified: 2 Student

Outcome of the Course: This course will develop the principles behind the design of an amplifier. By this course students can understand the functioning of OP-AMP and design OP-AMP based circuits. This course also helps in design and analyze various sinusoidal oscillators, rectifiers and amplifier circuits.

Summary of "The Joy of Computing using Python" NPTEL Course (noc19-cs09)

Session: 2018-19

Python

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It provides code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python lets you work quickly and integrate systems more efficiently. At present Python is being used in web development, machine learning applications, along with all cutting edge technology in software industry. Python programming language is very well suited for beginners, also for experienced programmers with other programming languages like C++ and Java.

Student Enrolled: 68

Student Certified: 8

Outcome of the Course:

Python programming is a general-purpose, and used in almost all fields like data science, web development, system automation and administration, basic game development, general and application-specific scripting etc. Additionally at present, Python is widely used by a number of big companies like Google, Pinterest, Instagram, Disney, Yahoo!, Nokia, IBM, and many others. The Raspberry Pi, which is a minicomputer relies on Python. So this course will help learners in getting more job opportunities.

Summary of Course Programming in C++ (noc19-cs10)

Session: 2018-19

C++ is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and so on. C++ supports different ways of programming like procedural, object-oriented, functional, and so on. This makes C++ powerful as well as flexible.

C++ is still readily used in programming today. Despite the advent of popular object-oriented programming languages like Python, C++ continues to have a dedicated space in the tech world. C++ is still the go to language for solutions that need fast machine performance. Video games, IoT, embedded systems, and resource-heavy VR and AI applicationsrun on C or C++.

No. of Students Enrolled: 102 Students

No. of Students Certified: 5 Students

Outcome of the Course:

This course builds up on the knowledge of C programming and basic data structure (array, list, stack, queue, binary tree etc.) to create a strong familiarity with C++98 and C++03. Besides the constructs, syntax and semantics of C++ (over C), it also focusses on various idioms of C++ and attempt to go to depth with every C++ feature justifying and illustrating them with several examples and assignment problems. On the way, it illustrates various OOAD (Object-Oriented Analysis and Design) and OOP (Object-Oriented Programming) concepts.

While this course can be understood independently, it would help in developing understanding in OOP.

Summary of Course "English language for Competitive exams (noc19-hs18)"

Session: 2018-19

The course is designed and developed to suit the needs of those students who aim to appear for competitive exams with English Language as their core subject. It will be useful for those who aspire towards acing competitive exams with language in English as the main subject and/or want to pursue a higher academic degree, particularly as researchers, in India or abroad. The course includes major works, historical developments, sub-disciplines, movements and trends in English, American and also World language. The participants will also gain an understanding about the key literary figures of all time and their contribution to their respective literary scene.

No. of Students Enrolled:18

No. of Students Certified:03

Outcome of the Course:

The course will introduce the basic forms of English language to the students.
The course will develop the skill to compete the students in competition exam.
The course will develop reading skill and creative and expressive ability of the students.

Summary of Programming, Data Structures and Algorithms using Python NPTEL Course(noc19-cs08)

Session: 2018-19

Programming, Data Structures and Algorithms using Python: Data Structure can be defined as the group of data elements which provides an efficient way of storing and organizing data in the computer so that it can be used efficiently. Examples of Data Structures are arrays, Linked List, Stack, Queue, etc. Data Structures are the main part of many computer science algorithms as they enable the programmers to handle the data in an efficient way. Data structures can be educated using any of the different programming languages available today. Python provides several benefits over other languages such as C++ and Java, the most important of which is that Python has a simple syntax that is easier to learn. Mostly Python language is used for introducing participants to programming and problem solving.

Student Enrolled: 66 Students

Student Certified: 4 Students

Outcome of the Course- This course builds up basic concepts such as conditionals, loops, functions, lists, strings, tuples searching and sorting algorithms, dynamic programming and backtracking, as well as exception handling, Python dictionaries as well as classes and objects for defining user defined data types such as linked lists and binary search trees. Participants will learn to Store data as key/value pairs using Python dictionaries, accomplish multi-step tasks like sorting or looping using tuples, create programs that are able to read and write data from files

Summary of Hydration, Porosity & Strength of Cementitious Materials Course (noc19-ce03)

Session: 2018-19

Cement and concrete is the backbone of infrastructure development and it is important that engineers have a clear understanding of issues involved not only with cement, hydration and strength development, but also porosity, permeability and durability. With the basic framework using Ordinary Portland Cement, the course focuses on developing the subject in light of advances in chemical and mineral admixtures. Though the subject matter is approached from the point of view of the concrete science, the fact that paste made with OPC alone or in combination with other cementitious materials, is almost never used in the field is not light of. Illustrative examples from actual applications will be included to show the applications of the scientific principles.

Student Enrolled: 28 Students

Certified: 01 Students

Outcomes of the Course:

After completion of the course:

- Students will understand some of the basic properties of concrete.
- Students will understand an integral part of concrete, the combination of cement paste and cementitious materials.

Summary of Data Base Management System course(noc19-cs12)

Session: 2018-19

Databases form the backbone of all major applications today – tightly or loosely coupled, intranet or internet based, financial, social, administrative, and so on. Structured Database Management Systems (DBMS) based on relational and other models have long formed the basis for such databases. Consequently, Oracle, Microsoft SQL Server, Sybase etc. have emerged as leading commercial systems while MySQL, PostgreSQL etc. lead in open source and free domain.

Student Enrolled: 72 Students

Student Certified: 4 Students

Outcome of the Course:

DBMS is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc. Upon successful completion of this course, students will be Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing.

Summary Report Sample (2017-18)

Summary of Campus Recruitment Training (CRT) Program

Campus Recruitment training (CRT) at is designed to aid candidates in their preparation for Recruitment through Campuses or outside campuses (i.e On campus or off campus). Students in their final step of graduation and post-graduation looking for placement in reputed organizations can make use of this training to get trained to deliver their best in the selection processes of organizations.

Session: 2017-18

Student Enrolled: 1061 Student

Student Benefited: 1061 Student

After completion of CRT students will able to-

1. Understand organizational procedures and policies as related to how the employers process for campus recruitment and employer preferences
2. Use self-assessments to identify strengths, weaknesses, transferable skills, and prime marketable characteristics.
3. Organize and write an effective cover letter and Resume.
4. Exercise judgment and logical decision making in selecting from alternative techniques for Group Discussion & Interview.

Infosys Campus Connect Foundation Program (Rollout)

Campus Connect is an Industry-Academia collaboration program to align engineering student competencies with industry needs, Launched by Infosys in 2004. Campus Connect is a unique academia-industry initiative to "architect the education experience". The students will have better exposure to industry requirements. To build a sustainable partnership with engineering education institutions in India and abroad for mutual benefit, producing "industry ready" recruits.

Objectives for Infosys Campus Connect Programme

The foundation program is aimed at imparting the necessary knowledge and skills to a fresh entrant to take up the challenges of a project work. The main objective of Campus Connect is to evolve a model through which Infosys and academia:

- Can partner for competitiveness.
- Can enhance the pool of highly capable talent for growth requirements in the Information Technology space.
- Can enhance the quality and quantity of IT education.
- Sustain the growth of the IT industry itself.
- Increase the employability of students.
- Achieve a high-quality, constant product with the help of our faculty members.
- The Foundation Program aligns technical competency to a student's individual needs.
- The methodology goes beyond teaching or beyond curriculum.
- It comprises real-life case studies, and insights into application of technology.
- These unique teaching aids go a long way in ensuring that the students are "industry ready."

Campus Connect equips graduates not only in computer science and software engineering, but also helps them apply their learning to practical situations, with special emphasis on teamwork, project management, cross functional networking, and effective communication.

The purpose of this Campus Connect Foundation Program_is to bridge the gap commonly noticed in engineering students in the areas of communication, teamwork, corporate etiquette, and corporate work culture.

Benefits of the programme

The main benefit to the student is enhancing employability and increasing the industry

readiness for the IT industry. Outstanding performance in the Infosys screening examination will also make such students eligible for early association with real-life projects, if applicable, and other special opportunities.

Session: 2017-18

Student Enrolled: 354

Summary of C Spoken Tutorial Course (2017-18)

C: It is a procedural programming language. It was mainly developed as a system programming language to write an operating system. The main features of the C language include low-level memory access, a simple set of keywords, and a clean style, these features make C language suitable for system programming like an operating system or compiler development. C has now become a widely used professional language as it is easy to learn, Structured and can handle low-level activities.

Student Enrolled: 304

Student Certified: 293

Outcome of the Course

Acquiring an understanding of C will allow you to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++. By learning C, students will be able to understand and visualize the inner workings of computer systems (like allocation and memory management), their architecture and the overall concepts that drive programming. By learning C students can work on large, open-source projects, like making contributions to Python, that will impact millions of programmers worldwide. Knowledge of C will simplify the process of learning other languages. These languages typically share similar syntax, operators, control statements, data types and more.

Summary of C++ Spoken Tutorial Course (2017-18)

C++: C++ is a cross-platform language that can be used to create high performance applications. It gives programmers a high level of control over system resources and memory. It is an object-oriented programming language which gives a clear structure to programs and allows code to be reused, lowering development costs. It is portable and can be used to develop applications that can be adapted to multiple platforms. C++ is a middle-level language rendering it the advantage of programming low-level (drivers, kernels) and even higher-level applications (games, GUI, desktop apps etc.).

Student Enrolled: 316

Student Certified: 303

Outcome of the Course

C++ plays quite an integral role in modern times as many contemporary systems such as operating systems, web browsers, databases, etc. have C++ code in at least some part of their codebase. Moreover, C++ is quite useful in performance critical areas because of its speed. C++ is a programming language that is used in everyday life. It is an object-oriented language, and all the features of C programming language are used here. This is used for games, operating systems, autonomous cars as well as medical technology. C++ Developers are quite sought after and they hold some of the most high-paying jobs in the industry.

Summary of LaTeX Spoken Tutorial Course (2017-18)

LaTeX: LaTeX is most used to create documents for academia, such as academic journals. In LaTeX, the author does not stylize the document directly, like in a word processor such as Microsoft Word, LibreOffice Writer, or Apple Pages; instead, they write code in plain text that must be compiled to produce a PDF document.

Student Enrolled: 143

Student Certified: 57

Outcome of the Course

Latex is used to write documents containing mathematical formulas, articles in different journal styles, drawing graphs and figures, preparing presentation, write mathematical documents etc. So, this course is also helpful creating documents using plain text, stylized using markup tags, like HTML/CSS or Markdown.

Summary of Linux Spoken Tutorial Course (2017-18)

Linux: Linux is a community of open-source Unix like operating systems that are based on the Linux Kernel. It is used in other machines like servers, mainframe computers, supercomputers, embedded systems like routers, automation controls, televisions, digital video recorders, video game consoles, smartwatches, etc. Android (operating system) is based on the Linux kernel that is running on smartphones and tablets. Due to android Linux has the largest installed base of all general-purpose operating systems. Linux is generally packaged in a Linux distribution.

Student Enrolled: 298

Student Certified: 278

Outcome of the Course

Linux is open-source software. The code used to create Linux is free and available to the public to view, edit, and for users with the appropriate skills to contribute to. This course will prepare students to work comfortably and productively in open-source development communities and Linux environments, to learn to develop software for Linux/UNIX systems, to understand the inner workings of UNIX-like operating systems etc.

Summary of PHP and MySQL Spoken Tutorial Course(2017-18)

PHP: Hyper text processor is a widely used Open-Source general-purpose scripting language that is specially suit for web development and can be embedded into HTML. The Main goal of the language is to allow web developers to write dynamically generated web pages quickly. MySQL is a relational database management system (RDBMS) that runs as a server providing multi-user access to a few databases.

Student Enrolled: 110 Student

Student Certified: 103 Student

Outcome of the Course:

World leading social networking site, has a huge code based on PHP and it uses MySQL as database to store the information of user. Many free and open-source CMS like Drupal, Moodie etc. ate created using PHP and MySQL. So, this course is also helpful for web development by free-lances developers.

Summary of Python Spoken Tutorial Course (2017-18)

Python: Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It provides code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python lets you work quickly and integrate systems more efficiently. At present Python is being used in web development, machine learning applications, along with all cutting-edge technology in software industry. Python programming language is very well suited for beginners, also for experienced programmers with other programming languages like C++ and Java.

Student Enrolled: 109

Student Certified: 89

Outcome of the Course-

Python programming is a general-purpose, and used in almost all fields like data science, web development, system automation and administration, basic game development, general and application-specific scripting etc. Additionally, at present, Python is widely used by several big companies like Google, Pinterest, Instagram, Disney, Yahoo!, Nokia, IBM, and many others. The Raspberry Pi, which is a minicomputer relies on Python. So, this course will help learners in getting more job opportunities.

Summary of Java Spoken Tutorial Course(2017-18)

Java: With the growth of Information and Communication Technology, there is a need to develop large and complex software. Further, that software should be platform independent, Internet enabled, easy to modify, secure, and robust. To meet this requirement object-oriented paradigm has been developed and based on this paradigm the Java programming language emerges as the best programming environment. Now, Java programming language is being used for mobile programming, Internet programming, and many other applications compatible to distributed systems. This course aims to cover the essential topics of Java programming so that the participants can improve their skills to cope with the current demand of IT industries and solve many problems in their own filed of studies.

Student Enrolled: 226

Student Certified: 197

Outcome of the Course

Java is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc. Upon successful completion of this course, students will be Familiar with Java Programming Features, Java Programming Tools, Application versus Applet, Access Modifiers in Java, Basics of JDBC Driver and Jframe.

Summary of PERL Spoken Tutorial Course (2017-18)

PERL: Perl is a programming language which was originally developed for script manipulation. But now Perl is used for a variety of purpose including web development, GUI development, system administration and many more. It is a stable, cross platform programming language. For web development, Perl CGI is used. CGI is the gateway which interacts with the web browser and Perl in a system. Its typical use is extracting information from a text file and printing out report for converting a text file into another form.

Student Enrolled: 273

Student Certified: 193

Outcome of the Course

Perl has borrowed the most important programming paradigms and implemented them in a consistent and fun way. It is a dynamic language, that supports Object-Oriented Programming (OOP), Functional Programming (FP), Aspect-Oriented Programming, and lots of other buzzwords, while not trying to prevent you from writing quick and dirty code to get your work done. As such, Perl is highly enlightening. Students have no problem in picking up such languages as Python, Ruby, PHP, Java, Microsoft .NET, or more obscure languages such as Scheme. In fact, Perl has proven very influential on most of these languages, to a large extent. Perl is also a useful steppingstone for learning ANSI C and C++, and also will improve your code writing in any language. If a student can understand Perl, he will understand the whole programming world.

Summary of Scilab Spoken Tutorial Course

Scilab is a programming language associated with a rich collection of numerical algorithms covering many aspects of scientific computing problems. The Scilab language is meant to be extended so that user-defined data types can be defined with possibly overloaded operations. Scilab users can develop their own module so that they can solve their particular problems. The Scilab language allows to dynamically compile and link other languages such as Fortran and C: this way, external libraries can be used as if they were a part of Scilab built-in features. Scilab provides many graphics features, including a set of plotting functions, which allow to create 2D and 3D plots as well as user interfaces. The Xcos environment provides an hybrid dynamic systems modeler and simulator.

Student Enrolled: 16 Student

Student Certified: 16 Student

Outcome of the Course:

1. Understand the need for simulation/implementation for the verification of mathematical functions.
2. Understand the main features of the SCILAB program development environment to enable their usage in the higher learning.
3. Implement simple mathematical functions/equations in numerical computing environment such as SCILAB.
4. Interpret and visualize simple mathematical functions and operations thereon using plots/display.
5. Analyze the program for correctness and determine/estimate/predict the output and verify it under simulation environment using SCILAB tools.

Summary of Introduction to Cryptology Course

Session: 2017-18

Cryptology: **Cryptology**, science concerned with data communication and storage in secure and usually secret form. It encompasses both cryptography and cryptanalysis. Cryptography (from the Greek *kryptós* and *gráphein*, "to write") was originally the study of the principles and techniques by which information could be concealed in ciphers and later revealed by legitimate users employing the secret key.

Student Enrolled: 1 Student

Student Certified: 1 Student

Outcome of the Course:

The modern study of **cryptography** investigates techniques for facilitating interactions between distrustful entities. In our connected society, such techniques have become indispensable---enabling, for instance, automated teller machines, secure wireless networks, internet banking, satellite radio/television and more.

Summary of Refrigeration and Air-Conditioning Course

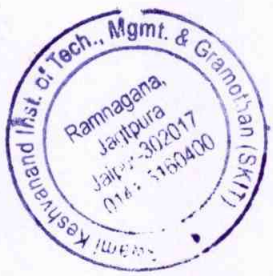
This Course provides a simple understanding of Refrigeration and Air-conditioning fundamentals. The course consists of different refrigeration cycles and understanding of psychrometry and psychrometric processes used for the purpose of air-conditioning. Further, the comfort air-conditioning and indoor environment health are also addressed in this course.

Student Enrolled: 2 Students

Certified: 2 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Refrigeration and Air-Conditioning and will be able to apply the basic principles to analyze Refrigeration and Air-Conditioning systems.



Summary of Introduction to Modern Application Development Course

This course assumes that the student knows how to develop a typical monolithic desktop single user application. We gradually morph such a desktop app into a web app that uses distributed components and serves multiple users at the same time.

In this process, we see how familiar ideas like user interfaces, data storage, and front-end vs backend distinctions get reformulated in the new web aware distributed context. We discover how the assumption of multiple users via multiple access points adds new concerns such as identity management and security and learn techniques for addressing them.

At the end of this course, you should be able to build a basic distributed web app and analyse constituent elements of the web and mobile applications that you use daily.

Student Enrolled: 43 Students

Certified: 1 Students

Outcomes of the Course:

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

- A student has knowledge about object-oriented application design, in particular knowledge about UML, design patterns and MDA.
- A student has knowledge about standards used in the process of software development.
- A student can properly use the selected tools dedicated to application design.

Year: 2017-18

Summary of Strength of Materials NPTEL Course

Strength of Materials: Strength of Materials is a fundamental subject. As the engineering design of different components, structures etc. used in practice are done using different kinds of materials, it is essential to understand the basic behavior of such materials. The objective of the present course is to make the students acquainted with the concept of load resultant, consequences and how different kinds of loadings can be withstood by different kinds of members with some specific materials. This course is designed so that the students can grasp the basics of the application of loading system and its consequence in a deformable body.

Students Enrolled: 108 Students

Students Certified: 01 Students

Outcome of the Course:

After completing this course, students will be able to understand basic concepts of structural design. This course will also help the students to understand the stress-strain relation and bending & deflection of beams.

Session- 2017-18

Summary of Engineering Thermodynamics Course (noc 17- ae06)

Session: 2017-18

This course introduces the most powerful engineering principles-Thermodynamics: the science of energy and its transformation from one form to another form. The objective of this course is to introduce systematic different tools needed to analyze energy systems from various daily lives to large scale engineering applications.

Student Enrolled: 83 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Engineering Thermodynamics and will be able to apply the basic principles to analyze Engineering Thermodynamics systems.

Summary of Design for Internet of things Course

Session: 2017-18

Internet of things: An overview of IOTs, design of smart objects that provide collaboration and ubiquitous services will be explored. Design for longevity/energy efficiency will be highlighted. Step by step system design will be introduced. IoT design means that the focus is on singular experiences and no longer but about design principles that represent a broader ecosystem within which IoT devices function.

Student Enrolled: 15 Student

Student Certified: 1 Student

Outcome of the Course:

The IoT provides a platform that creates opportunities for people to connect these devices and control them with big data technology, which in return will promote efficiency in performance, economic benefits and minimize the need for human involvement. It's the most important development of the 21st century. So, this course will help learners in getting more knowledge and job opportunities.

Summary of Course "Cloud Computing (noc18-cs23)"

Session: 2017-18

Cloud computing is a scalable services consumption and delivery platform that provides on-demand computing service for shared pool of resources, namely servers, storage, networking, software, database, applications etc., over the Internet. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly provisioned and released with minimal management effort.

Cloud computing can be deployed universally in practically no time and offer the most extreme flexibility, agility and cost-sparing IT operations to business for progressively profitable and consistent development. This, thus, is making entrepreneurs change to cloud computing for completing business activities.

No. of Students Enrolled: 43 Students

No. of Students Certified: 1 Student

Outcome of the Course:

This course will introduce various aspects of cloud computing, including fundamentals, management issues, security challenges and future research trends. This will help students and researchers to use and explore the cloud computing platforms.

Summary of Introduction to algorithms and analysis NPTEL course

Session: 2017-18

Introduction to algorithms and analysis: An algorithm is the best way to represent the solution of a particular problem in a very simple and efficient way. If we have an algorithm for a specific problem, then we can implement it in any programming language. An efficient algorithm solves a problem in an efficient way using minimum time and space. Analysis of algorithm is the process of analyzing the problem-solving capability of the algorithm in terms of the time and size required. However, the main concern of analysis of algorithms is the required time or performance. If we require an algorithm to run in lesser time, we have to invest in more memory and if we require an algorithm to run with lesser memory, we need to have more time.

Student Enrolled: 12

Student Certified: 1

Outcome of the Course- This course will help to analyze the asymptotic performance of algorithms, write rigorous correctness proofs for algorithms, demonstrate a familiarity with major algorithms and data structures, apply important algorithmic design paradigms and methods of analysis and synthesize efficient algorithms in common engineering design situations. This course also provide an experience in building algorithms and implementing them on clusters and distributed systems, develop proficiency in problem solving and programming and carry out the analysis of various algorithms for mainly time and space complexity.

Summary of Laws of thermodynamics Course(noc17-me16)

Session: 2017-18

Thermodynamics is the branch of science that describes the basic laws and principles governing the processes of transfer and transformation of energy along with the changes in properties of the substances affected by such processes. The laws are formulated from observations in nature. The basic principles as corollaries of the laws are established through logical deductions following the laws. The science of thermodynamics also provides the relationships of the properties of substances for their use in determining the changes of properties in physical processes performed by the substances.

Student Enrolled: 48 Students

Certified: 6 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of physical concepts of thermodynamics also it will enable the students to get rid of usual misleading concepts in understanding the laws and their applications.

Summary of Course "Introduction to Programming in C(noc18-cs43)"

Session: 2017-18

C is a highly efficient and simplistic programming language that was initially developed to write operating systems. Among its many benefits and features that make it so flexible and easy to use, it has low-level access to memory, a clean and concise style and a simplistic set of keywords. Additionally, the source code that is written using C for one system can work just as effectively on another operating system without experiencing any changes.

Acquiring an understanding of C will allow to easily learn and use a wide range of other programming languages that use C as their basis by borrowing the features and syntax used in C, such as Java and C++.

No. of Students Enrolled:7

No. of Students Certified:7

Outcome of the Course:

From this course students are enabled to formulate simple algorithms for arithmetic and logical problems and able to translate the algorithms to C programs. One can able to test and execute the programs and correct syntax and logical errors. It helps to implement conditional branching, iteration and recursion and learn use of arrays, pointers and structure to formulate algorithms and programs. One can apply programming to solve matrix addition and multiplication problems.

Summary of Theory of Production Processes Course (noc18-me 27)

Session: 2017-18

The course focuses on understanding the science behind technology of primary production processes namely casting, forming and welding. The course will make the students aware with the theoretical aspects of the different manufacturing processes mentioned above. The course has been divided into three sections namely casting, forming and welding, each being covered in 4 weeks of time. The underlying principles of solidification, fluidity, gating, risering, melting etc. will be covered in casting section whereas mechanics of metalworking, analysis of different metal working processes will be covered in the second section i.e. forming. In the third section i.e. welding, principles of welding processes, thermal effects, weldability etc. will be covered.

Student Enrolled: 1 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Theory of Production Processes and the course will enable the students be conversant with working principles so that they can use the knowledge gained towards increasing the productivity of manufacturing industries in the long run.

Summary of Fundamentals of Nuclear Power Generation Course(noc18-me13)

Session: 2017-18

The depleting stock of fossil fuels and global concern over the preservation of environment has projected nuclear energy as a very relevant option, particularly considering the near-zero emission and huge resource availability. From technological point of view, nuclear power production is quite different from the conventional thermal plants and therefore it is the need of the hour to grasp the essentials at an early level.

Student Enrolled: 1 Students

Certified: 1 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of fundaments of nuclear power generation. Starting from the atomic structure, students will be gradually familiarized with different concepts, finally leading to the design of different reactors. Important topics such as nuclear waste management, biological impact of radiation and safety issues pertinent to handling nuclear fuels will also be discussed.

Summary of Information Security-IV

With the increase in the threat of cyber-security attacks, it is important to develop computer systems that are not only efficient but also secure. This course will discuss various vulnerabilities in systems and mechanisms by which these vulnerabilities can be mitigated. The first part of the course will discuss various security vulnerabilities in software code that, if left unfixed, can potentially lead to major cyber-attacks. We will see how these vulnerabilities can arise from simple programming flaws like a buffer that overflows, to complex application runtime characteristics that get manifested through side-channels such as the execution time and power consumption of the device. We will look at some recent cyber-attacks such as Meltdown and Spectre, Heartbleed, and Stage fright. The pre-requisites are a good understanding of C and a basic understanding of computer organization and operating systems

Student Enrolled: 1 Students

Certified: 1 Students

Outcomes of the Course:

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

- Develop an understanding of information assurance as practiced in computer operating systems, distributed systems, networks and representative applications.
- Gain familiarity with prevalent network and distributed system attacks, defenses against them, and forensics to investigate the aftermath.
- Develop a basic understanding of cryptography, how it has evolved, and some key encryption techniques used today.
- Develop an understanding of security policies (such as authentication, integrity and confidentiality), as well as protocols to implement such policies in the form of message exchanges.

Year: 2017-18

Summary Report Sample (2016-17)

Summary of Campus Recruitment Training (CRT) Program

Campus Recruitment training (CRT) at is designed to aid candidates in their preparation for Recruitment through Campuses or outside campuses (i.e on campus or off campus). Students in their final step of graduation and post-graduation looking for placement in reputed organizations can make use of this training to get trained to deliver their best in the selection processes of organizations.

St **Session:** 2016-17

Student Enrolled: 923 Student

Student Benefited: 923 Student

After completion of CRT students will be able to-

1. Understand organizational procedures and policies as related to how the employers process for campus recruitment and employer preferences
2. Use self-assessments to identify strengths, weaknesses, transferable skills, and prime marketable characteristics.
3. Organize and write an effective cover letter and Resume.
4. Exercise judgment and logical decision making in selecting from alternative techniques for Group Discussion & Interview.

Summary of Course "Cloud Computing (noc17-cs23)"

Session: 2016-17

Cloud computing is a scalable services consumption and delivery platform that provides on-demand computing service for shared pool of resources, namely servers, storage, networking, software, database, applications etc., over the Internet. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly provisioned and released with minimal management effort.

Cloud computing can be deployed universally in practically no time and offer the most extreme flexibility, agility and cost-sparing IT operations to business for progressively profitable and consistent development. This, thus, is making entrepreneurs change to cloud computing for completing business activities.

No. of Students Enrolled:1

No. of Students Certified:1

Outcome of the Course:

This course will introduce various aspects of cloud computing, including fundamentals, management issues, security challenges and future research trends. This will help students and researchers to use and explore the cloud computing platforms.

Infosys Campus Connect Foundation Program (Rollout)

Campus Connect is an Industry-Academia collaboration program to align engineering student competencies with industry needs, Launched by Infosys in 2004. Campus Connect is a unique academia-industry initiative to "architect the education experience". The students will have better exposure to industry requirements. To build a sustainable partnership with engineering education institutions in India and abroad for mutual benefit, producing "industry ready" recruits.

Objectives for Infosys Campus Connect Programme

The foundation program is aimed at imparting the necessary knowledge and skills to a fresh entrant to take up the challenges of a project work. The main objective of Campus Connect is to evolve a model through which Infosys and academia:

- Can partner for competitiveness.
- Can enhance the pool of highly capable talent for growth requirements in the Information Technology space.
- Can enhance the quality and quantity of IT education.
- Sustain the growth of the IT industry itself.
- Increase the employability of students.
- Achieve a high-quality, constant product with the help of our faculty members.
- The Foundation Program aligns technical competency to a student's individual needs.
- The methodology goes beyond teaching or beyond curriculum.
- It comprises real-life case studies, and insights into application of technology.
- These unique teaching aids go a long way in ensuring that the students are "industry ready."

Campus Connect equips graduates not only in computer science and software engineering, but also helps them apply their learning to practical situations, with special emphasis on teamwork, project management, cross functional networking, and effective communication.

The purpose of this Campus Connect Foundation Program is to bridge the gap commonly noticed in engineering students in the areas of communication, teamwork, corporate etiquette, and corporate work culture.

Benefits of the programme

The main benefit to the student is enhancing employability and increasing the industry

readiness for the IT industry. Outstanding performance in the Infosys screening examination will also make such students eligible for early association with real-life projects, if applicable, and other special opportunities.

Session: 2016-17

Student Enrolled: 275

Summary of Probability and Statistics Course

The use of statistical reasoning and methodology is indispensable in modern world. It is applicable to every discipline, be it physical sciences, engineering and technology, economics, or social sciences. Much of the advanced research in electronics, electrical, computer science, industrial engineering, biology, genetics, and information science relies increasingly on use of statistical tools. It is essential for the students to get acquainted with the subject of probability and statistics at an early stage. The present course has been designed to introduce the subject to undergraduate/postgraduate students in science and engineering. The course contains a good introduction to each topic and an advance treatment of theory at an understandable level to the students at this stage. Each concept has been explained through examples and application-oriented problems

Student Enrolled: 1 Students

Certified: 1 Students

Outcomes of the Course:

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

- Define the principal concepts about probability.
- Express the concepts of factorial and the basic principle of counting.
- Solve the problems about permutation, combination, and Binomial Theorem

Year: 2016-17

Summary of Introduction to Modern Application Development Course

This course assumes that the student knows how to develop a typical monolithic desktop single user application. We gradually morph such a desktop app into a web app that uses distributed components and serves multiple users at the same time.

In this process, we see how familiar ideas like user interfaces, data storage, and front-end vs backend distinctions get reformulated in the new web aware distributed context. We discover how the assumption of multiple users via multiple access points adds new concerns such as identity management and security and learn techniques for addressing them.

At the end of this course, you should be able to build a basic distributed web app and analyse constituent elements of the web and mobile applications that you use daily.

Student Enrolled: 2 Students

Certified: 2 Students

Outcomes of the Course:

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

- A student has knowledge about object-oriented application design, in particular knowledge about UML, design patterns and MDA.
- A student has knowledge about standards used in the process of software development.
- A student is able to properly use the selected tools dedicated to application design.

Year: 2016-17

Summary of Six Sigma Course

The course on Six-Sigma will focus on detailed strategic and operational issues of process improvement and variation reduction. Six-sigma is a measure of quality that strives for near perfection. It is a disciplined, data-driven approach for eliminating defects (driving towards six standard deviations between the mean and the nearest specification limit) in any process- from manufacturing to transactional and from product to service.

A Six-sigma defect is anything outside of customer specifications. To be tagged Six Sigma, a process must not produce more than 3.4 defects per million opportunities.

Six-sigma employs a systematic approach of DMAIC (Define, Measure, Analyze, Improve and Control) for the process improvement. This course will provide a detailed understanding on various issues specific to each phase of DMAIC.

Student Enrolled: 1 Students

Certified: 1 Students

Outcomes of the Course:

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

- Understand the scope and breadth of a Lean Six Sigma initiative.
- Gain an understanding of what waste is and how to identify it so that it can be reduced.
- Become aware of variation and techniques to reduce it.

Year: 2016-17

Summary of Steam and Gas Power Systems Course

This Course provides a simple understanding of the steam and gas power systems. The course contains the analysis of vapor power cycle i.e. Rankine cycle, steam generators and their accessories, Performance of Boilers and combustion of fuel, high pressure boilers, flow through steam and gas nozzles, different type of steam turbines for power generation and condensers. The gas turbine cycle, working of gas turbines, centrifugal compressors, axial compressors, and combustion chamber of gas turbines.

Student Enrolled: 4 Students

Certified: 4 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Steam and Gas Power Systems and will be able to apply the basic principles to analyze Steam and Gas Power Systems.

Summary of Introduction to Fluid Mechanics Course

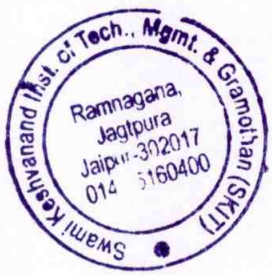
Fluid Mechanics has a wide scope and is of prime importance in several fields of engineering and science. Present course emphasizes the fundamental underlying fluid mechanical principles and application of those principles to solve real life problems. Special attention is given towards deriving all the governing equations starting from the fundamental principle. There is a well-balanced coverage of physical concepts, mathematical operations along with examples and exercise problems of practical importance.

Student Enrolled: 4 Students

Certified: 4 Students

Outcomes of the Course:

After completion of the course, the students will have a strong fundamental understanding of the basic principles of Fluid Mechanics and will be able to apply the basic principles to analyze fluid mechanical systems.



Summary of Programming, Data Structures and Algorithms using Python

NPTEL Course(noc17-cs10)

Session: 2016-17

Programming, Data Structures and Algorithms using Python: Data Structure can be defined as the group of data elements which provides an efficient way of storing and organizing data in the computer so that it can be used efficiently. Examples of Data Structures are arrays, Linked List, Stack, Queue, etc. Data Structures are the main part of many computer science algorithms as they enable the programmers to handle the data in an efficient way. Data structures can be educated using any of the different programming languages available today. Python provides several benefits over other languages such as C++ and Java, the most important of which is that Python has a simple syntax that is easier to learn. Mostly Python language is used for introducing participants to programming and problem solving.

Student Enrolled: 1 Student

Student Certified: 1 Student

Outcome of the Course- This course builds up basic concepts such as conditionals, loops, functions, lists, strings, tuples searching and sorting algorithms, dynamic programming, and backtracking, as well as exception handling, Python dictionaries as well as classes and objects for defining user defined data types such as linked lists and binary search trees. Participants will learn to Store data as key/value pairs using Python dictionaries, accomplish multi-step tasks like sorting or looping using tuples, create programs that are able to read and write data from files