



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

DEPARTMENT OF INFORMATION TECHNOLOGY

SUBJECT WISE COURSE OUTCOMES (2022- 2023)

SUBJECT LIST (13-14 Regulations)

SI NO.	COURSE CODE	COURSE NAME
01.	T101	Mathematics – I
02.	T102	Physics
03.	T103	Chemistry
04.	T104	Basic Electrical and Electronics Engineering
05.	T105	Engineering Thermodynamics
06.	T106	Computer Programming
07.	P101	Computer Programming Laboratory
08.	P102	Engineering Graphics
09.	P103	Basic Electrical and Electronics Laboratory
10.	T107	Mathematics –II
11.	T108	Material Science
12.	T109	Environmental Science
13.	T110	Basic Civil and Mechanical Engineering
14.	T111	Engineering Mechanics
15.	T112	Communicative English
16.	P104	Physics Lab



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

17.	P105	Chemistry Lab
18.	P106	Work Shop Practice
19.	P107	NSS/NCC
20.	MA T31	Mathematics –III
21.	IT-T32	Electronic Devices And Circuits
22.	IT-T33	Data Structures
23.	IT-T34	Object Oriented Programming
24.	IT-T35	Digital System Design
25.	IT-T36	Computer Organization
26.	IT-P31	Data Structures Lab
27.	IT-P32	Electronic Devices And Circuits Lab
28.	IT-P33	Digital Lab
29.	MA-T41	Mathematics-IV
30.	IT-T42	Communication Engineering-I
31.	IT-T43	Design And Analysis Of Algorithms
32.	IT-T44	Microprocessors And Microcontrollers
33.	IT-T45	Java Programming
34.	IT-T46	System Software
35.	IT-P41	Algorithms Lab
36.	IT-P42	Microprocessors And Microcontrollers Lab
37.	IT-P43	Java Lab




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

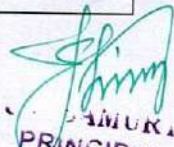
COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

38.	PE-P44	Physical Education -II
39.	IT-T51	Communication Engineering-II
40.	IT-T52	Software Engineering
41.	IT-T53	Operating Systems
42.	IT-T54	Data Base Management System
43.	IT-T55	Theory Of Computation
44.	IT-E51	Computer Hardware And Trouble Shooting
45.	IT-P51	Communication Engineering Lab
46.	IT-P52	Operating systems Lab
47.	IT-P53	Data Base Management System Lab
48.	HS-P54	General proficiency-I
49.	IT-T61	Computer Networks
50.	IT-T62	Web Technology
51.	IT-T63	Artificial Intelligence
52.	IT-T64	Information Coding Techniques
53.	IT-E62	Software Project Management
54.	IT-E68	User Interface Design
55.	IT-P61	Computer Networks Lab
56.	IT-P62	Web Technology Lab
57.	IT-P63	Mini Project
58.	HS-P64	General proficiency-II
59.	IT-T71	Mobile Computing




 DR. S. SENTHIL KUMAR, M.E., Ph.D.
 PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

60.	IT-T72	Web Services And Xml
61.	IT-T73	Cryptography And Network Security
62.	IT-E72	Software Testing
63.	IT-E73	Management Concepts And Strategies
64.	IT-P71	Mobile Computing Lab
65.	IT-P72	Web Services And Xml Lab
66.	IT-P73	Project work Phase-I
67.	IT-P74	Seminar
68.	IT-P75	Industrial Training / Internship
69.	IT-T81	Professional Ethics
70.	IT-T82	Distributed Computing
71.	IT-E81	E-Commerce
72.	IT-P81	Project work Phase-II
73.	IT-P82	Comprehensive Viva Voce




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

I-SEMESTER

T101 - Mathematics - I		Yr/Sem: I/I
CO 1	Apply knowledge of mathematics to solve functions of several variables.	
CO 2	Identify, formulate and solve engineering problems like multiple integrals and their usage.	
CO 3	To solve differential equations that model physical processes using effective mathematical tools	
CO 4	Able to find equation of straight line of shortest distance, equation of plane, angle between straight lines.	
CO 5	Gain the knowledge to solve first order differential equation arising in engineering.	

T102 - Physics		Yr/Sem: I/I
CO 1	Apply knowledge of science and engineering to understand physics and its significant contribution in the advancement of technology and invention of new products that dramatically transform modern day society.	
CO 2	Identify different areas of physics which have direct relevance and applications to different engineering disciplines	
CO 3	Apply fundamental knowledge to understand applications of ultrasonics, optics and some optical devices, lasers and fiber optics, nuclear energy sources and wave mechanics.	
CO 4	Understand the basic operating principles of laser, its applications, optical fiber, and its types, transmission characteristics, applications of optical fibers.	
CO 5	Understand the basic operating principles of laser, its applications, optical fiber, and its types, transmission characteristics, applications of optical fibers.	

T103 - Chemistry		Yr/Sem: I/I
CO 1	Apply knowledge of science and engineering to understand the importance of chemistry in engineering domain.	
CO 2	Identify different electrochemical cells and their usage for industrial process.	
CO 3	Apply fundamental knowledge of chemistry and build an interface of theoretical concepts with industrial applications/engineering applications.	
CO 4	Guide the students to gain the knowledge about the cooling curves, phase diagrams, alloys and their practical importance.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

CO 5	Strengthen the fundamentals of chemistry and then build an interface of theoretical concepts with their industrial/engineering applications
------	---

T110-Basic Civil and Mechanical Engineering		Yr/Sem: I/I
CO 1	Understanding the building classification as per National building code.	
CO 2	Get the idea about construction procedure for various components of the building.	
CO 3	Students understand the principles of surveying, construction procedure for roads, bridges and dams.	
CO 4	Student will able to know about the working of internal and external combustion systems.	
CO 5	Student will be able know about Non-Conventional Energy Systems	
CO 6	Student will be able to know about manufacturing process.	

T111- Engineering Mechanics		Yr/Sem: I/I
CO 1	Understand the basic laws of mechanics and resolution of forces using different methods.	
CO 2	Learn and apply the knowledge on analysis of forces acting on the trusses and effect of friction force on bodies.	
CO 3	Learn about the centroid and moment of inertia for plane and solid figures.	
CO 4	Understand the three laws of motion, principles of dynamics for particles.	
CO 5	The student will able to analyze the laws of motion for rigid bodies.	

T112- Communicative English		Yr/Sem: I/I
CO 1	Learnt about the definition of communication, importance, concept. Sender, Ideation, the levels in communication, channels, oral and written way of communication, body language and non-verbal communication, Accuracy, Brevity and Clarity, different barriers for Communication, techniques in making effective communication, listening importance and types of listening.	
CO 2	Students learnt about the types of letters, report writing, notices and memo and also developed their skill in writing.	
CO 3	Understands the comprehension, identifies the difference between Skimming and scanning, guess the meaning of the words, Identify to make notes.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.C.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

CO 4	Students learnt the writing skills, how to write a paragraph in a proper manner, four modes of writing and how to make bibliographical entries.
CO 5	Students were able to develop their spoken skills by making them to involve in many activities related to it.

P 104 - Physics Lab		Yr/Sem: I/II
CO 1	Able to understand how to find the thickness of the specimen and also to find the radius of curvature of glass using the phenomenon of interference of light	
CO 2	Able to understand the specific rotatory power of an optical active solution using the principle of polarization.	
CO 3	To understand about the thermal conductivity of bad conductor and rubber tube.	
CO 4	Ability to understand about the optical properties like dispersive power, Resolving power by applying the knowledge of optics	
CO 5	To acquire knowledge about the magnetometer due to current coil and jolly method of determining the pressure coefficient of air at constant volume.	
CO 6	Ability to understand the basic knowledge of inference ,polarization ,Magnetic materials ,thermal conductivity that correlates the theory and practical	

P 105 - Chemistry Lab		Yr/Sem: I/II
CO 1	Students will become well acquainted to test amount of hardness present in sample of water for their engineering needs	
CO 2	Students will be efficient in estimating acidity/alkalinity in given samples.	
CO 3	Students will have knowledge about estimating amount of dissolved oxygen in water.	
CO 4	Students will become well acquainted to estimate copper in brass.	
CO 5	Students will have knowledge about determination of viscosity of sucrose using Ostwald's viscometer.	
CO 6	To develop an understanding of basic titration setup and methodologies for determining strength, hardness and alkalinity of various unknown solutions	



Dr. S. SEENUVASAMURTHI, M.E., Ph.C.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

P 106 - Workshop Practice		Yr/Sem: I/II
CO 1	Understand and comply with workshop safety regulations.	
CO 2	Student will be able to make various joints in the given object with the available work material.	
CO 3	Student will be able to know how much a joint will take for the assessment of time.	
CO 4	Students can able to Identify the hand tools and instruments.	
CO 5	Students can able to gain knowledge about various operations carried out in sheet metal.	
CO 6	Students can able to gain skills about various tools used in welding to make simple joints.	

SEMESTER-II

T 107 - Mathematics - II		Yr/Sem: I/II
CO 1	Apply knowledge of mathematics to solve matrix algebra technique for practical applications and Curl, divergence and integration of vectors in vector calculus.	
CO 2	Identify, formulate and solve engineering problems like Laplace transform and to solve differential and integral equations.	
CO 3	Apply formulae and analyze problems of Fourier transform techniques.	
CO 4	Determine the Fourier transform, Fourier cosine and sine transform of elementary functions, properties of transforms and its application in engineering	
CO 5	Acquire knowledge of matrix algebra technique, vector calculus, Laplace and Fourier Transform.	

T109 - Environmental Science		Yr/Sem: I/II
CO 1	Apply fundamental knowledge to understand about the environment.	
CO 2	Identify environmental pollution through science	
CO 3	Apply basic knowledge to solve various environmental issues and problems	
CO 4	Ability to consider issues of environment and sustainable development in his personal and professional undertakings.	
CO 5	Provides a comprehensive knowledge in environmental science, environmental issues and the management from an interdisciplinary perspective.	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

T104 - Basic Electrical and Electronics Engineering		Yr/Sem: I/II
CO 1	Will learn the fundamentals of rotational and stationary machine operation, single-phase and three-phase power measurement, magnetic and electrical circuits, and these topics.	
CO 2	Will learn the fundamentals of measuring devices, communication systems, and network models.	
CO 3	Knowledge about non-conventional energy systems will be available to students.	
CO 4	The varieties of metal joining will be known by the students.	
CO 5	Students will learn about numerous engines, energies, and joints as well as construction and building components offered with diverse principles.	

T105 - Engineering Thermodynamics		Yr/Sem: I/II
CO 1	Apply knowledge of mathematics, science and engineering to understand the basics of thermodynamics.	
CO 2	Understand the importance of laws of thermodynamics applied to energy systems.	
CO 3	Understanding refrigeration, heat pump and their physical mechanism.	
CO 4	Understand the laws of motion for rigid bodies.	
CO 5	Understand the effects of forces acting on the bodies in practical situation.	

T106- Computer Programming		Yr/Sem: I/II
CO 1	Know concepts in problem solving.	
CO 2	To do programming in C language.	
CO 3	To write diversified solutions using the C language.	
CO 4	To know about structures, pointers and its manipulation.	
CO 5	To know about the evaluation of computers, components and its applications. Basic knowledge on the internet, information technology, word processing and worksheets.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

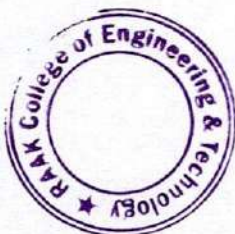
An ISO 9001:2015 Certified Institution

P101 - Computer Programming Laboratory		Yr/Sem: I/II
CO 1	Students can work with command line interface OS's, like MS-DOS.	
CO 2	Students can solve most of the real time problems with C program.	
CO 3	Students can interact with computer using C program, through various input and output functions.	
CO 4	Students can make a use of various keywords, constants, variables, data types, operators, type conversion in C program.	
CO 5	Students will have knowledge about arrays, functions, structures, and pointers in C program.	

P102 - Engineering Graphics		Yr/Sem: I/II
CO 1	Perform freehand sketching of basic geometrical constructions and multiple views of objects.	
CO 2	Project orthographic projections of lines and plane surfaces.	
CO 3	Draw projections and solids and development of surfaces.	
CO 4	visualize and to project isometric and perspective sections of simple solids.	
CO 5	Students will be able to draw orthographic projections and isometric projections.	

P103 - Basic Electrical and Electronics Laboratory		Yr/Sem: I/II
CO 1	Know about basic electrical tools, applications and precautions	
CO 2	Perform different types of wiring used in domestic and industrial applications.	
CO 3	Measurements of voltage and phase using CRO, basic operation and applications of devices such as PN junction diode and transistors.	
CO 4	Understand the function and applications of basic logic gates and flip flops.	
CO 5	Gain knowledge in domestic wiring and application of electronics device in the field of electrical engineering.	

P107 - NSS/NCC		Yr/Sem: I/II
CO 1	To create awareness in social and environmental issues.	
CO 2	To participate in relief and rehabilitation work during natural calamities.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

CO 3	To develop some proposals for local slum area development and waste disposal.
CO 4	To create team works among students and produce efficient results.
CO 5	To operate scientific instruments or advanced software.

SEMESTER-III

MA T31 - Mathematics - III		Yr/Sem: II/III
CO 1	Identify complex variable function, Apply CR equations for testing of analyticity of the complex function.	
CO 2	Construct conformal mappings between regions. Solve problems on bilinear transformation and find the Taylor's and Laurent's series.	
CO 3	Analyze the complex functions with reference to their analyticity, integration using Cauchy's integral theorem and Cauchy's Residue theorem.	
CO 4	Express any periodic function as Fourier series, Fourier sine and Cosine series.	
CO 5	Finding Fourier series for numerical values of any function. Interpret and use the basic concepts of analytic function, Taylor and Laurent series, singularities, residues, conformal mapping, Fourier series and Harmonic analysis.	

IT T32 - Electronic Devices and Circuits		Yr/Sem: II/II
CO 1	Classify semiconductor materials and discuss the construction and operation of PN junction diodes, Zener diodes. Need and use of Clippers, Clampers, Series and Shunt regulators.	
CO 2	Discuss the construction, operation, and characteristics of transistors. Analyze the transistor biasing circuits using the stability factor. Discuss the creation and operation of Field Effect Transistor devices, MOSFET, BJT, as well as their V-I Characteristics curves. Analyze the important parameters of FET, JFET, MOSFET.	
CO 3	Examine the circuit and operation of RC Coupled Amplifier, Class A, Class B, Class C and D amplifiers. Examine the Positive and Negative Feedback, Barkhausen Criterion, Wien Bridge, Hartley, Colpits and Crystal Oscillator.	
CO 4	Confer and examine op-amp characteristics, parameters and applications. Consider and review summer, subtractor, differentiator, integrator, comparator, multiplier filters.	
CO 5	Discuss the operation and principles of special purpose diodes, seven segment displays, OPTO- isolator. Examine characteristics and equivalent circuit of UJT, SCR, DIAC and TRIAC.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthipalayam Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

IT-T33 DATA STRUCTURE		Yr/Sem:II/III
CO 1	To introduce the primary data structures and the associated operations	
CO 2	To understand the applications of data structures with case studies	
CO 3	To learn the implementation issues of the data structures introduced	
CO 4	Discuss on graph, representation, traversals, topological sort, Operations, representation and applications on sets.	
CO 5	Confer on tables, its types, static and dynamic tree tables, hash tables. Discuss on files and sorting with tapes and disks.	

IT T34 - Object Oriented Programming		Yr/Sem: II/III
CO 1	Confer and discuss the concepts, advantages of OOP. Examine the structure of C++ program, control structures. Consider and explain classes and objects, OOPs Concepts (Encapsulation), friend function, member function, overloading member function. Discuss the L Values, R Values, return references and function overloading.	
CO 2	Review on the need of constructors, destructors, copy constructors, recursive constructor. Discuss about the overloading functions, classes and inheritance, pointers, and overloading member functions.	
CO 3	Examine pointers and arrays to classes and objects, void pointers. Confer the memory models and dynamic objects. Discuss about polymorphism, virtual functions, string attributes.	
CO 4	Discourse about file stream classes, binary and ASCII files, error handling functions. Converse generic programming, class templates and inheritance, operator overloading, class templates and exception handling.	
CO 5	Discuss OO concepts, UML diagrams, OO design methodology.	

IT T35 - Digital System Design		Yr/Sem: II/III
CO 1	Discuss Binary number systems, BCD codes, Excess-3 codes, Gray codes, Alphanumeric codes, Error detecting and correction codes. Confer De-Morgan's	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 006



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

	theorems, canonical form. Examine karnaugh maps, Quine-Mc-Cluskey method, universal gates.
CO 2	Confer combinational logic (adders, subtractors, multipliers), Encoders, Decoders, Multiplexers, De-multiplexers, comparators and parity checker.
CO 3	Discourse about flip flops, counters, types and applications of shift registers. Discuss the design of clocked sequential circuits, Mealy and Moore models, state reduction techniques.
CO 4	Discuss about organization of ROM and RAM, PLDs, PLAs, PAL devices, FPGAs implementation using PROMs, PLAs, PALs
CO 5	Discourse Verilog HDL, 4 bit ripple carry counter, Gate level Modeling, Data low Modeling. Discuss on counters, full adders and behavioral modeling

IT T36 - Computer Organization		Yr/Sem: II/III
CO 1	To understand the basic operation of a computer	
CO 2	To understand the design and organization of a Von-Neumann computer system.	
CO 3	To comprehend the importance of the hardware-software interface.	
CO 4	Can be familiar with the Von Neumann architecture, parallel, pipelined, superscalar, and RISC/CISC architectures.	
CO 5	Confess, multiple-bus organization, hardwired control, micro-programmed control, pipelining superscalar operations, performance considerations	

IT P32 - Data Structures Laboratory		Yr/Sem:II/III
CO 1	To introduce the basics of C++ programming language.	
CO 2	To introduce the concepts of ADTs.To introduce the concepts of Hashing and Sorting	




 Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
 PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

IT P32 - Electronics Devices and Circuits Laboratory		Yr/Sem:II/III
CO 1	Demonstrate the V-I Characteristics of PN Junction diode, Zener diode. Clipper circuits, input & output Characteristics of BJT, JFET, MOSFET and UJT transistor configuration. Application of clippers, clampers	
CO 2	Application of OPAMP, Determination of ripple factor for of rectifiers with and without filters and Draw the Voltage regulation characteristics of shunt using IC	

IT P33 - Digital Laboratory		Yr/Sem: II/III
CO 1	Comprehension : Discuss the combinational circuit as Adder, Subtractor, Magnitude comparator, Multiplexers, Encoders, Decoders and De-multiplexers using basic logic gates.	
CO2	Comprehension: Discuss the sequential circuits Shift register, Ripple Counters, Synchronous Counters with the help of digital basic logic gate. Simulation of combinational and sequential logic using HDL.	

SEMESTER-IV

MA T41 - Mathematics - IV		Yr/Sem: II/IV
CO 1	Formulate and solve partial differential equation.	
CO 2	Derive and obtain the solution of wave equation and boundary value problems.	
CO 3	Derive and obtain the solution of heat equation and boundary value problems.	
CO 4	Apply least square method to fit various curves for the given data investigate the validity of hypothesis by Z-distribution techniques.	
CO 5	Calculation of analysis of variance and explain the use of the Chi-squared test and its calculation.	

IT T42 – Communication Engineering-I		Yr/Sem: II/IV
CO 1	To introduce the basics of electronic communication	
CO 2	To introduce different analog modulation systems	




Dr. S. SEENUVASAMURTHI, M.E., Ph.C.
PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

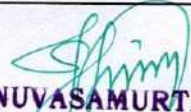
An ISO 9001:2015 Certified Institution

CO 3	To introduce the operation of modulator and demodulator for different analog modulation systems.
CO 4	To explore the use of pulse modulation system
CO 5	To introduce the techniques of digital modulation

IT T43 - Design and Analysis of Algorithms		Yr/Sem: II/IV
CO 1	Confer asymptotic notations -Heap, shell, radix, insertion, selection and bubble sort; sequential, binary and Fibonacci search. Discuss about recurrence equations, analyzing control structures.	
CO 2	Exchange views on Divide and Conquer Method, Strassen's Matrix multiplication, knapsack problem - minimum spanning tree algorithms scheduling, optimal storage on tapes, optimal merge patterns.	
CO 3	Discuss on Dynamic Programming, all pair shortest path algorithm - 0/1 Knapsack and Traveling salesman problem - chained matrix multiplication. Techniques for binary trees and graphs - AND/OR graphs - bi-connected components - topological sorting.	
CO 4	Discourse - 8-queens problem - sum of subsets - graph coloring -Hamiltonian cycle - Knapsack problem.	
CO 5	Discuss Least Cost (LC) search - the 15-puzzle problem - control abstractions for LC-Search - Bounding- FIFO Branch-and-Bound - 0/1 Knapsack problem - Traveling Salesman Problem, NP-Hard and NP- Completeness.	

IT T44 - Microprocessors and Microcontrollers		Yr/Sem: II/IV
CO 1	Comprehension: Describe the architecture of 8085 and development of assembly language program by using instruction sets, stack and subroutines, looping statements and discuss about addressing modes of a typical microprocessor.	
CO 2	Comprehension: Describe the function of different peripheral IC's 8253, 8259, 8237 to interface with external peripheral device.	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)


An ISO 9001:2015 Certified Institution

CO 3	Application: Demonstrate the architecture of 8279, 8255 and also develop the assembly language program with the help of special function registers, timers and counters and demonstrate 8251 USART.
CO 4	Comprehension: Describe the architecture of 8086 and also develop the ASM program with the help of instruction set and addressing modes.
CO 5	Confer and demonstrate Intel 8051 Microcontroller, Pins and signals, Timing and control, interrupts and Instruction set.

IT T45 – JAVA Programming		Yr/Sem: II/IV
CO 1	To understand the basics of Java	
CO 2	To learn the features of Java	
CO 3	To learn the advanced concepts in Java.	
CO 4	Students will understand the benefits and capabilities of Java.	
CO 5	To summarize java offers code reusability, platform independence	

IT T46 – System Software		Yr/Sem: II/IV
CO 1	Understand the design and implementation of Assemblers, loaders, linkers and compilers.	
CO 2	Understand how source language programs are implemented at the machine level.	
CO 3	Understand compilation as an instance of language translation.	
CO 4	To design and implement a significant portion of a compiler for a language chosen by the instructor	
CO 5	To use of formal attributed grammars for specifying the syntax and semantics of programming languages. Have in depth Working knowledge of the major phases of Loading linking and compiling.	




 Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
 PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

IT P41 - Algorithms Laboratory		Yr/Sem: II/IV
CO 1	To introduce the implementation of various design techniques using C and C++.	
CO 2	Learn to implement the complex tasks using various design techniques.	

IT P42- Microprocessors and Microcontrollers Laboratory		Yr/Sem: II/IV
CO 1	Experiment using 8085 microprocessor and implement arithmetic operations, block operations, code conversions, real time examples	
CO 2	Experiment and implement using 8086 microprocessor and 8051 microcontroller	

IT P43- JAVA Laboratory		Yr/Sem: II/IV
CO 1	To understand the basics of java	
CO 2	To write programs in Java covering the object oriented concepts. To write programs covering advanced concepts in java like thread handling, applets, RMI and JDBC	

SP P44- Physical Education		Yr/Sem: II/IV
CO 1	Understanding the opportunities of students' physical, cognitive, social and emotional development.	
CO 2	Understanding of individual and group motivation and behavior.	
CO 3	To create teamwork among students and produce efficient results.	
CO 4	The students were taught to operate advanced playing kits.	
CO 5	to motivate the students to prepare the professional and scientific reports	

SEMESTER-V

IT T51- Communication Engineering-II		Yr/Sem: II/IV
CO 1	To learn the various orbits used for satellite communication systems	
CO 2	To understand the working principle of various satellite systems and their applications.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.

PRINCIPAL

RAAK College of Engineering & Technology

No.1, Muthupillai Palayam Road,

Sulthanpet Post,

Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

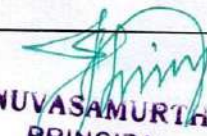
CO 3	To understand the concept of spread spectrum technologies, Rake receivers and CDMA
CO 4	To introduce the concept and operation of cellular mobile communication and to introduce various cellular standards
CO 5	To learn the need for fiber optics communication and the operation of fiber optic communication system.

IT T52- Software Engineering		Yr/Sem: III/V
CO 1	Understanding various approach in Software Development life Cycle.	
CO 2	Discuss about complete strategic approaches towards project management and estimation techniques followed in software development.	
CO 3	Discourse the good software design and the function oriented software design.	
CO 4	Confer the concepts of object oriented design approach.	
CO 5	Understanding the process involved in user interface design and studying various testing methods.	

IT T53 - Operating Systems		Yr/Sem: III/V
CO 1	Discuss about mainframe, distributed, multiprocessor, clustered, real time systems, OS services, system calls, system services, Inter process communication.	
CO 2	Discuss about scheduling criterion, threading issues, critical section, synchronization and semaphores.	
CO 3	Confer about deadlock, paging, segmentation.	
CO 4	Discourse file systems, access methods, file sharing.	
CO 5	Exchange views on disk scheduling, kernel and case study on linux system and windows.	

IT T54- Database Management Systems		Yr/Sem: III/V
CO 1	Discuss about database architecture, relational algebra, query languages, relational calculus, SQL.	
CO 2	Discourse DB design and ER model, Indexing and hashing concepts, static and dynamic hashing, bitmap indices.	
CO 3	Confer relational DB design, normal forms, temporal data.	
CO 4	Discuss about query processing, query optimization, ACID properties, isolation levels, transactions as SQL statements	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

CO 5	Exchange views on deadlocks, IBM DB2, My SQL, levels of consistency.
------	--

IT T55- Theory of Computation		Yr/Sem: III/V
CO 1	Learning about automata, grammar, language, and their relationships. Further, gives an understanding of the power of Turing machine, and the decidable nature of a problem. Also, gives the idea on some new trends and applications.	
CO 2	Explain the basic concepts of deterministic and non-deterministic finite automata regular language, context-free language, Turing machines, computability and complexity.	
CO 3	Describe the formal relationships among machines, languages and grammars.	
CO 4	Solve the problems using formal language.	
CO 5	Develop a view on the importance of computational theory.	

IT E51- COMPUTER HARDWARE AND TROUBLESHOOTING		Yr/Sem: III/V
CO 1	It provides insight to the various parts and types of computer.	
CO 2	It familiarizes the hardware types and the evolution in each of them	
CO 3	It also gives the basics of troubleshooting.	
CO 4	Implementation of the data structures in different language platforms	
CO 5	The students will have theoretical exposure as well as hands on exposure to know about the hardware aspects of computer.	

IT P51- Communication Engineering Laboratory		Yr/Sem: III/V
CO 1	To understand the working of main concepts of analogue and digital communication systems	
CO 2	To enhance technical skills through analyzing the waveforms obtained at various stages of the experiment. To verify the experimentally obtained and simulated outputs and knowing the reason for the deviation.	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road.
Sulthanpet Post.
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

IT P52 - Operating Systems Laboratory

Yr/Sem: III/V

CO 1	Implement basic UNIX /LINUX commands, programs implementing I/O system calls, implement scheduling algorithms.
CO 2	Implement synchronization problem, memory management schemes, and develop application using RTOS.

IT P53 - Database Management System Laboratory

Yr/Sem: III/V

CO 1	Study database, SQL, Query types and procedural query language
CO 2	Design and develop real time applications.

HS P54 - General Proficiency - I

Yr/Sem: III/V

CO 1	To understand and practice the art of communication
CO 2	To able to practice and showcase soft skills.
CO 3	To understand the importance of writing.
CO 4	To practice speaking skill.
CO 5	To practice verbal, non-verbal and numerical aptitude.

SEMESTER-VI

IT T61 - Computer Networks

Yr/Sem: III/VI

CO 1	Discuss about the network hardware and software, various layer in the OSI.
CO 2	Discourse the data link layer in detail, services, design, protocols.
CO 3	Confer the network layer in detail, services, design, addresses.
CO 4	Exchange views on the transport layer in detail, services, design, congestion control.
CO 5	Discourse the application layer in detail, services, design, protocols.

IT T62 - Web Technology

Yr/Sem: III/VI

CO 1	Confer major components and protocols of internet applications and design web page.
CO 2	Discuss about client side and server side programming languages for web.



S. Seenuvasamurthi
Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 119



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

CO 3	Enable to design and develop web page using xml .language by schema techniques and formatting objects.
CO 4	Confer the importance of multimedia in web designing and usage of web application development.
CO 5	Understand web services and modules involved in building in service. Confer and develop programs using ajax concepts.

IT T63 - Artificial Intelligence		Yr/Sem: III/VI
CO 1	Confer history of AI, exchange views on Heuristic Search Techniques, Means Ends Analysis, Intelligent agents.	
CO 2	Discuss about propositional logic, predicate logic, forward and backward reasoning, filler structure, Based agents.	
CO 3	Discourse about non-monotonic reasoning, certainty factors, Bayesian networks, Fuzzy logic.	
CO 4	Confer and analyze the planning techniques, forms of learning.	
CO 5	Discuss about mini max search procedure, expert system representation, expert system shells, robotics.	

IT T64 - Information Coding Techniques		Yr/Sem: III/VI
CO 1	To understand the coding principles and different security algorithms.	
CO 2	Learn the coding techniques.	
CO 3	Learn the cryptographic algorithms	
CO 4	Study the code generation process.	
CO 5	To analyze the compression techniques.	

IT E62- Software Project Management		Yr/Sem: III/VI
CO 1	To understand the roles of the project manager	
CO 2	To understand the threats and opportunities in project management	
CO 3	To gain Expertise in size, effort and cost estimation technique	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

CO 4	To understand the techniques available with which a project's aims and objectives, timetable, activities, resources and risks can be kept under control
CO 5	To understand the social and political problems a project will encounter against which the technical problems pale into insignificance--and to begin to understand how to approach non-technical problems

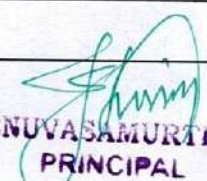
IT E68- User Interface Design		Yr/Sem: III/VI
CO 1	To study the basic characteristics of graphics and web interfaces	
CO 2	The students learn concepts of user interface and used for web applications, human interfaces and for multimedia interfaces.	
CO 3	To study Human Computer Interaction, multimedia interfaces for the web and the principles of evaluating interfaces	

IT P61 - Computer Networks Laboratory		Yr/Sem: III/VI
CO 1	Implement a socket program to transfer file using TCP, UDP, program for CRC and Hamming code, program for sliding window protocols, TCP module implementation.	
CO 2	Implementation of routing protocols, ARP, security compromise on a node using NS2, implementation of traffic sources using NS2.	

IT P62 - Web Technology Laboratory		Yr/Sem: III/VI
CO 1	Understand and work with client side scripting, ActiveX, web servers and Java Server Pages.	
CO 2	Work and develop applications using XML, Server Side scripting, Ajax programming, Web services and mini project on E-commerce application.	

IT P63 – Mini Project		Yr/Sem: III/VI
CO 1	Software requirements analysis and specification, Software testing and maintenance	
CO 2	Communication skills and teamwork	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

HS P64 – General Proficiency – II		Yr/Sem:III/VI
CO 1	Understand the composition analysis.	
CO 2	Developing letter and resume writing skills.	
CO 3	Understand and practice oral skills through group discussions and negotiation activities.	
CO 4	Practice corporate etiquette, grooming and dressing.	
CO 5	Practice verbal, non-verbal and numerical aptitude.	

SEMESTER-VII

IT T71 - Mobile Computing		Yr/Sem: IV/VII
CO 1	To understand basic concepts of wireless and mobile communication.	
CO 2	Exchange views about the state of art industry standards in wireless networking.	
CO 3	Confer the various facilities available for mobile communication including protocol and security mechanism.	
CO 4	Discuss various transaction models associated with mobile data management in mobile computing.	
CO 5	Discourse the widely used mobile computing models.	

IT T72- Web Services and XML		Yr/Sem: IV/VII
CO 1	To understand the advantages of using XML technology family.	
CO 2	To analyze the problems associated with tightly coupled distributed software architecture.	
CO 3	To learn the Web services building block	
CO 4	To implement e-business solutions using XML based web services	
CO 5	Students will understand the benefits of XML, web services and SOA. They will learn how to develop e-business applications using these technologies.	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

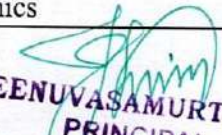
An ISO 9001:2015 Certified Institution

IT T73- Cryptography and Network Security		Yr/Sem: IV/VII
CO 1	To learn about wired and wireless network security with various cryptographic techniques.	
CO 2	Use appropriate methods in security	
CO 3	Learn various methods of implementing security	
CO 4	Include private and public keys algorithms along with attacks types.	
CO 5	Advanced techniques of security and their implementation Implementation of the latest security for latest security threats	

IT E72- SOFTWARE TESTING		Yr/Sem: IV/VII
CO 1	To accuire knowledge on various test design and strategies	
CO 2	To learn, practice and apply the software testing industry practices	
CO 3	Ability to apply appropriate testing methods for varying requirements of the software industry.	
CO 4	Understanding and executing the responsibility of the software testing personal and producing error free software	
CO 5	The students can be encouraged to apply concepts learnt in this course in their programming laboratory and project.	

IT E723- MANAGEMENT CONCEPTS AND STRATEGIES		Yr/Sem: IV/VII
CO 1	To introduce the fundamental of Management concept strategies	
CO 2	To study the concepts of Software Management	
CO 3	To get acquainted with Software Quality Assurance Standardization	
CO 4	Manage Software projects in organization	
CO 5	Follow Social responsibility, standards, policies and Ethics	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

IT P71 - Mobile Computing Laboratory		Yr/Sem: III/VII
CO 1	To introduce the basics of Mobile computing.	
CO 2	To introduce the WML and J2ME Technologies, to learn Bluetooth and distributed mobile computing.	

IT P72 - Web Services and XML Laboratory		Yr/Sem: III/VII
CO 1	The students learn how to design and develop business applications using the popular middleware technologies practiced in the industry.	
CO 2	Develop distributed applications in popular platform independent technologies for any business domain.	

IT P73 - Project Phase - I		Yr/Sem: IV/VII
CO 1	Motivate students to select application related projects.	
CO 2	Students study the reference papers from various domain and select domain of their wish.	
CO 3	Students have detailed survey on selected domain and identify base paper and give presentation.	
CO 4	Students identified problem formulation of their existing work.	
CO 5	Students performed survey, identified the base paper, problem formulation and gave presentation.	

IT P74 - Seminar		Yr/Sem: IV /VII
CO 1	Students must be able to make critical review of literature.	
CO 2	Preparation of report on the topic.	

IT P75 - Industrial Visits/ Training		Yr/Sem: IV/VII
CO 1	Ability to demonstrate the use, interpretation and application of an appropriate international engineering standard in a specific situation.	
CO 2	Ability to analyze a given engineering problem, identify an appropriate problem solving methodology and propose a meaningful solution.	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road.
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

SEMESTER-VIII

IT T81 - Professional Ethics		Yr/Sem: IV/VIII
CO 1	Discuss engineering ethics, moral issues, ethical theories and their uses in engineering	
CO 2	Realize code of ethics, engineer's responsibility for safety, rights and responsibilities	

IT T82- Distributed Computing		Yr/Sem: IV/VIII
CO 1	To understand the importance of communication in distributed environment.	
CO 2	To study the actual implementation of various communication mechanisms.	
CO 3	To learn the distributed resource management mechanisms	
CO 4	Learn the distributed computing concepts. learn the resource management techniques.	
CO 5	Learn the file management in distributed environment.	

IT E81- E-Commerce		Yr/Sem: IV/VIII
CO 1	The students can learn how companies use e-commerce to gain competitive advantage.	
CO 2	To familiarize the students with the concepts of e-commerce	
CO 3	The students can learn different models of e-commerce.	
CO 4	The students can understand how e-payment is affected.	
CO 5	E -commerce legal issues	

IT P81 - Project Phase-II		Yr/Sem: IV/VIII
CO 1	Student installed and learnt the software simulation tool.	
CO 2	System architecture is designed and implementation of modules were done.	
CO 3	Review was conducted.	
CO 4	Demonstration of project and performance analysis is done.	
CO 5	Presentation is done and Report is submitted	




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road.
Sulthanpet Post.
Puducherry 605 011



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution


IT P82 -Comprehensive Viva-Voce

Yr/Sem: IV/VIII

CO 1

Remember all areas of Computer Science and engineering.




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road.