St Thomas Institute for Science and Technology
Department of Civil Engineering
Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	**LINEAR ALGEBRA AND CALCULUS**
Course Code	MAT101

Course Outcome

Sl No	Outcomes
CO1	Solve systems of linear equations, diagonalize matrices and characterise quadratic forms
CO2	Compute the partial and total derivatives and maxima and minima of multivariable functions
CO3	compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and centre of gravity of plane laminas
CO4	Perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent
CO5	Determine the Taylor and Fourier series expansion of functions and learn their applications.

St Thomas Institute for Science and Technology
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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	ENGINEERING PHYSICS B
Course Code	PHT110

Course Outcome

Sl No	Outcomes
CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.
CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.
CO3	Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices.
CO4	Apply the knowledge of ultrasonics in non-destructive testing and use the principles of acoustics to explain the nature and characterization of acoustic design and to provide a safe and healthy environment
CO5	Apply the comprehended knowledge about laser and fibre optic communication systems in various engineering applications

St Thomas Institute for Science and Technology
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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	ENGINEERING MECHANICS
Course Code	EST 100
Course Outcome	
Sl No	Outcomes
CO1	Recall principles and theorems related to rigid body mechanics
CO2	Identify and describe the components of system of forces acting on the rigid body
CO3	Comprehend the properties of planes and choose appropriate theorems and formulae to solve problems of plane and analyze force systems in space
CO4	Choose appropriate theorems, principles or formulae to solve problems of mechanics
CO5	Solve problems involving rigid bodies, applying the properties of distributed areas and masses

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	BASICS OF CIVIL & MECHANICAL ENGINEERING
Course Code	EST120
Course Outcome	
Sl No	Outcomes
CO1	Recall the role of civil engineer in society and to relate the various disciplines of Civil Engineering.
CO2	Explain different types of buildings, building components, building materials and building construction
CO3	Describe the importance, objectives and principles of surveying.
CO4	Summarise the basic infrastructure services MEP, HVAC, elevators, escalators and ramps
CO5	Discuss the Materials, energy systems, water management and environment for green buildings.
CO6	Analyse thermodynamic cycles and calculate its efficiency
CO7	Illustrate the working and features of IC Engines

CO8	Explain the basic principles of Refrigeration and Air Conditioning
CO9	Describe the working of hydraulic machines
CO10	Explain the working of power transmission elements
CO11	Describe the basic manufacturing, metal joining and machining processes

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	LIFE SKILLS
Course Code	HUN101
Course Outcome	
Sl No	Outcomes
CO1	Define and Identify different life skills required in personal and professional
CO2	Develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Explain the basic mechanics of effective communication and demonstrate these through presentations.
CO4	Take part in group discussions
CO5	Use appropriate thinking and problem solving techniques to solve new problems
CO6	Understand the basics of teamwork and leadership

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	ENGINEERING PHYSICS LAB
Course Code	PHL120
Course Outcome	
Sl No	Outcomes
CO1	Develop analytical/experimental skills and impart prerequisite hands on experience for engineering laboratories
CO2	Understand the need for precise measurement practices for data recording
CO3	Understand the principle, concept, working and applications of relevant technologies and comparison of results with theoretical calculations
CO4	Analyze the techniques and skills associated with modern scientific tools such as lasers and fiber optics
CO5	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S1
Course Name	CIVIL AND MECHANICAL WORKSHOP
Course Code	ESL120
Course Outcome	
Sl No	Outcomes
CO1	Name different devices and tools used for civil engineering measurements
CO2	Explain the use of various tools and devices for various field measurements
CO3	Demonstrate the steps involved in basic civil engineering activities like plot measurement, setting out operation, evaluating the natural profile of land, plumbing and undertaking simple construction work.
CO4	Choose materials and methods required for basic civil engineering activities like field measurements, masonry work and plumbing
CO5	Compare different techniques and devices used in civil engineering measurements
CO6	Identify Basic Mechanical workshop operations in accordance with the material and objects
CO7	Apply appropriate Tools and Instruments with respect to the mechanical workshop trades
CO8	Apply appropriate safety measures with respect to the mechanical workshop trades

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS
Course Code	MAT102

Course Outcome

Sl No	Outcomes
CO1	Compute the derivatives and line integrals of vector functions and learn their applications
CO2	Evaluate surface and volume integrals and learn their inter-relations and applications
CO3	Solve homogeneous and non-homogeneous linear differential equation with constant coefficients
CO4	Compute Laplace transform and apply them to solve ODEs arising in engineering
CO5	Determine the Fourier transforms of functions and apply them to solve problems arising in engineering

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	ENGINEERING CHEMISTRY
Course Code	CYT100

Course Outcome

Sl No	Outcomes
CO1	Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields.
CO2	Understand various spectroscopic techniques like UV-Visible, IR, NMR and its applications.
CO3	Apply the knowledge of analytical method for characterizing a chemical mixture or a compound. Understand the basic concept of SEM for surface characterisation of nanomaterials.
CO4	Learn about the basics of stereochemistry and its application. Apply the knowledge of conducting polymers and advanced polymers in engineering.
CO5	Study various types of water treatment methods to develop skills for treating wastewater.

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	ENGINEERING GRAPHICS
Course Code	EST110

Course Outcome

Sl No	Outcomes
CO1	Draw the projection of points and lines located in different quadrants
CO2	Prepare multiview orthographic projections of objects by visualizing them in different positions
CO3	Draw sectional views and develop surfaces of a given object
CO4	Prepare pictorial drawings using the principles of isometric and perspective projections to visualize objects in three dimensions.
CO5	Convert 3D views to orthographic views and vice versa
CO6	Obtain multiview projections and solid models of objects using CAD tools

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Course Outcome

Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING
Course Code	EST130
Course Outcome	
Sl No	Outcomes
CO1	Apply fundamental concepts and circuit laws to solve simple DC Circuits
CO2	Develop and solve models of magnetic circuits
CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state
CO4	Describe the working of a voltage amplifier
CO5	Outline the principle of an electronic instrumentation system
CO6	Explain the principle of radio and cellular communication

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Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	PROFESSIONAL COMMUNICATION
Course Code	HUN102

Course Outcome

Sl No	Outcomes
CO1	Develop vocabulary and language skills relevant to engineering as a profession
CO2	Analyze, interpret and effectively summarize a variety of textual content
CO3	Create effective technical presentations
CO4	Discuss a given technical/non-technical topic in a group setting and arrive at generalizations/consensus
CO5	Identify drawbacks in listening patterns and apply listening techniques for specific needs
CO6	Create professional and technical documents that are clear and adhering to all the necessary conventions

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Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	PROGRAMMING IN C
Course Code	EST102

Course Outcome

Sl No	Outcomes
CO1	Analyze a computational problem and develop an algorithm/flowchart to find its solution
CO2	Develop readable* C programs with branching and looping statements, which uses Arithmetic, Logical, Relational or Bitwise operators.
CO3	Write readable C programs with arrays, structure or union for storing the the data to be processed
CO4	Divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem
CO5	Write readable C programs which use pointers for array processing and parameter passing
CO6	Develop readable C programs with files for reading input and storing output

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Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	ENGINEERING CHEMISTRY LAB
Course Code	CYL120

Course Outcome

Sl No	Outcomes
CO1	Understand and practice different techniques of quantitative chemical analysis to generate experimental skills and apply these skills to various analyses
CO2	Develop skills relevant to synthesize organic polymers and acquire the practical skill to use TLC for the identification of drugs
CO3	Develop the ability to understand and explain the use of modern spectroscopic techniques for analysing and interpreting the IR spectra and NMR spectra of some organic compounds
CO4	Acquire the ability to understand, explain and use instrumental techniques for chemical analysis
CO5	Learn to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments
CO6	Function as a member of a team, communicate effectively and engage in further learning. Also understand how chemistry addresses social, economical and environmental problems and why it is an integral part of curriculum

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Program : B.Tech Civil Engineering
Syllabus : 2019

Semester	S2
Course Name	ELECTRICAL & ELECTRONICS WORKSHOP
Course Code	ESL130
Course Outcome	
Sl No	Outcomes
CO1	Demonstrate safety measures against electric shocks.
CO2	Identify the tools used for electrical wiring, electrical accessories, wires, cables, batteries and standard symbols.
CO3	Develop the connection diagram, identify the suitable accessories and materials necessary for wiring simple lighting circuits for domestic buildings.
CO4	Identify and test various electronic components
CO5	Draw circuit schematics with EDA tools
CO6	Assemble and test electronic circuits on boards
CO7	Work in a team with good interpersonal skills