Department of Science and Humanities

List of Course Outcomes for Academic year 2023-2024

Sl No.	Year & Semester	Course Code	Course Name	Course Outcome
1		**HS3151**	**PROFESSION AL ENGLISH I**	• CO1: To listen and comprehend complex academics texts. • CO2: To read and infer the denotative and connotative meanings of technical texts. • CO3: To write definitions, descriptions, narrations and essays on various topics. • CO4: To speak fluently and accurately in formal and informal communicative contexts. • CO5: To express their opinions effectively in both oral and written medium of communication. • CO1: To listen and comprehend complex academics texts. • CO2: To read and infer the denotative and connotative meanings of technical texts. • CO3: To write definitions, descriptions, narrations and essays on various topics.
2		MA3151	MATRICES AND CALCULUS	• CO1: Use the matrix algebra methods for solving practical problems. • CO2: Apply differential calculus tools in solving various application problems. • CO3: Able to use differential calculus ideas on several variable functions. • CO4: Apply different methods of integration in solving practical problems. • CO5: Apply multiple integral ideas in solving areas, volumes and other practical problems.
3	I/I	PH3151	**ENGINEERING PHYSICS**	• **CO1:** Understand the importance of mechanics. • **CO2:** Express their knowledge in electromagnetic waves. • **CO3:** Demonstrate a strong foundational knowledge in oscillations, optics and lasers. • **CO4:** Understand the importance of quantum physics.

				• **CO5:** Comprehend and apply quantum mechanical principles towards the formation of energy bands.	
4		CY3151	ENGINEERING CHEMISTRY	• **CO1:** Abel to identify the quality of water from quality parameter data and propose suitable treatment methodologies to treat water. • **CO2:** Identify and apply basic concepts of Nano science and nanotechnology in designing the synthesis of Nano Materials for engineering and technology applications. • **CO3:** Apply the knowledge of phase rule and composites for material selection requirements. • **CO4:** Recommend suitable fuels for engineering processes and applications. • **CO5:**To recognize different forms of energy resources and apply them for suitable applications in energy Sectors • **CO1:** Abel to identify the quality of water from quality parameter data and propose suitable treatment methodologies to treat water.	
5		GE3151	PROBLEM SOLVING AND PYTHON PROGRAMMING	• **CO1:** Develop algorithmic solutions to simple computational problems. • **CO2:** Read, write, execute simple python statements and expressions. • **CO3:** Develop Python programs with control flow and functions. • **CO4:** Develop Python programs with the use of lists, tuples, and dictionaries. • **CO5:** Implement read and write data from /to files in Python programs.	

6		GE3171	**PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY**	**CO 1:** Develop algorithmic solutions to simple computational problems. **CO 2:** Read, write, execute simple python statements and expressions. **CO 3:** Develop Python programs with control flow and functions. **CO 4:** Develop Python programs with the use of lists, tuples, and dictionaries. **CO 5:** Implement read and write data from /to files in Python programs.	
7		GE3152	**¾Á¢Æ÷ ÁÃÒ / Heritage of Tamils**	**CO1:**¦Á¡Æ¢ ÁüÚõþÄì¸ÂõÀüÈ¢ ¦¾¡¢óÐ ¦¸¡ûÙ¾ø - Understand knowledge about Language and literature **CO2:** º¢üÀì¸¨ÄÂø ¾Á¢Æ÷¸Ç¢ýÀíÌ - Role of Tamil People in Sculpture. **CO3:** ¿¡ðÎôÒÈì ¸¨Ä¸ûÁüÚõ Å£ÃÅ¢¨ÇÂ¡ðÎ¸Ç¢ø ¾Á¢Æ÷¸Ç¢ý ®íÀ¡Î - Role of Tamil people in folk arts and heroic sports **CO 4:**சங்கஇலக்கியத்தில்தாவரங்கள்மற்றும்வி லங்குகள்பங்கு. - To Know the flora and fauna of Ancient Tamilnadu. **CO5:** þó¾¢Â Å¡Î¾¨Äô §À¡¡¢ø ¾Á¢Æ÷ Àí
Ì - Understand the role of Tamils in Indian Independence Movement.	
8		GE3171	**PROBLEM SOLVING ANDPYTHON PROGRAMMING LABORATORY**	**CO1:** Develop algorithmic solutions to simple computational problems. **CO2:** Develop and execute simple Python programs. **CO3:** Implement programs in Python using conditionals and loops for solving problems. **CO4:** Deploy functions to decompose a Python program. **CO5:** Process compound data using Python data structures.	
9		BS3171	**PHYSICS AND CHEMISTRYL ABORATORY**	**CO1:** Apply Problem solving skills related to physics principles and interpretation of experimental data **CO2:** Able to determine error in experimental measurements and techniques used to minimize such error. **CO3:** Able to understand the quality of water sample with respect to their acidity, alkalinity, hardness and DO. **CO4:** Able to analyze composition of allays synthesis of Nano particles and impurities in solution by using different methods. **CO5:** Understand the determination of metal ions through volumetric & spectroscopic techniques.	
10		GE3172	**ENGLISH LABORATORY**	**CO1:** To listen to and comprehend general as well as complex academic information. **CO2:** To listen to and understand different points of view in a discussion. **CO3:** To speak fluently and accurately in formal and informal communicative contexts.	

				• **CO4:** To describe products and processes and explain their uses and purposes clearly and accurately. • **CO5:** To express their opinions effectively in both formal and informal discussions.
11.	I/II	HS3252	PROFESSIONAL ENGLISH -II	• **CO1:** To compare and contrast products and ideas in technical texts. • **CO2:** To identify cause and effects in events, industrial processes through technical texts. • **CO3:** To analyze problems in order to arrive at feasible solutions and communicate them orally and in the written format. • **CO4:** To report events and the processes of technical and industrial nature. • **CO5:** To present their opinions in a planned and logical manner, and draft effective resumes in context of job search.
12		MA3251	STATISTICS AND NUMERICAL METHODS	• **CO1:** Apply the concept of testing of hypothesis for small and large samples in real life problems. • **CO2:** Apply the basic concepts of classifications of design of experiments in the field of agriculture. • **CO3:** Apply numerical methods to find the solution of algebraic equations using different methods under different conditions and numerical solution of system of algebraic equations. • **CO4:** Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems. • **CO5:** Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations with initial and boundary conditions.
13		PH3251	MATERIAL SCIENCE	• **CO1:** To know basics of crystallography and its importance for varied materials properties. • **CO2:** To gain knowledge on the electrical and magnetic properties of materials and their applications. • **CO3:** Understand clearly of semiconductor physics and functioning of semiconductor devices. • **CO4:** Understand the optical properties of materials and working principles of various optical devices. • **CO5:** Appreciate the importance of functional nano electronic devices.
14		PH3259	APPLIED MATERIALS SCIENCE	• **CO1:** To know basics of crystallography and its importance for varied materials properties. • **CO2:** Understand the properties of materials through the study of phase relationships. • **CO3:** To gain knowledge on the electrical and magnetic properties of materials and their applications. • **CO4:** Understand clearly of semiconductor physics and functioning of semiconductor devices. • **CO5:** Understand the optical properties of materials and working principles of various optical devices

15		PH3201	PHYSICS FOR CIVIL ENGINEERING	• **CO1:** Acquire knowledge about heat transfer through different materials, thermal performance of building and thermal insulation. • **CO2:** To gain knowledge on the ventilation and air conditioning of buildings. • **CO3:** Understand the concepts of sound absorption, noise insulation and lighting designs. • **CO4:** To know about the processing and applications of composites, metallic glasses, shape memory alloys and ceramics. • **CO5:** To get an awareness on natural disasters such as earth quake, cyclone, fire and safety measures.
16		PH3254	PHYSICS FOR ELECTRONICS ENGINEERING	• **CO1:** To know basics of crystallography and its importance for varied materials properties. • **CO2:** To gain knowledge on the electrical and magnetic properties of materials and their applications. • **CO3:** Understand clearly of semiconductor physics and functioning of semiconductor devices. • **CO4:** Understand the optical properties of materials and working principles of various optical devices. • **CO5:** Appreciate the importance of nanotechnology and nano devices.
17		GE3251	ENGINEERING GRAPHICS	• **CO1:** Construct the conic curves, involutes and cycloid. • **CO2:** Solve practical problems involving projection of points, lines and planes. • **CO3:** Draw the orthographic projections of simple solids. • **CO4:** Draw the projections of sectioned solids and their development. • **CO5:** Draw the isometric and perspective projections of simple solids.
18		BE3253	BASIC ELECTRICAL, ELECTRONICS ENGINEERING AND MEASUREMENTS	• **CO1**: Compute the electric circuit's parameters for simple problems. • **CO2:** Explain the working principles and application of electrical machines. • **CO3:**Analyze the characteristic of analog electronic devices. • **CO4**: Explain the basic concepts of linear integrated circuits.

				• **CO5:** Explain the operating principles of measuring instruments.
19		BE3254	ELECTRICAL AND INSTRUMENTATION ENGINEERING	• **CO1:** Explain the working principle of electrical machines. • **CO2:** Analyze the output characterizes of electrical machines. • **CO3:** Choose the appropriate electrical machines for various applications. • **CO4:** Explain the types and operating principles of measuring instruments. • **CO5:** Explain the basic power system structure and protection schemes.
20		PH3256	PHYSICS FOR INFORMATION SCIENCE	• **CO1:** To gain knowledge on classical and quantum electron theories, and energy band structures. • **CO2:** Acquire knowledge on basics of semiconductor physics and its applications in various devices. • **CO3:** To get knowledge on magnetic properties of materials and their applications in data storage. • **CO4:** Understanding on the functioning of optical materials for optoelectronics. • **CO5:** Understand the basics of quantum structures and their applications and basics of quantum computing.
21		BE3251	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	• **CO1:** Compute the electric circuit parameters for simple problems. • **CO2:** Explain the working principle and applications of electrical machines. • **CO3:** Analyse the characteristics of analog electronic devices. • **CO4:** Explain the basic concepts of digital electronics. • **CO5:** Explain the operating principles of measuring instruments.
22		EC3251	CIRCUIT ANALYSIS	• **CO1:** Apply the basic concepts of circuit analysis such as Kirchhoff's laws, mesh current and node voltage method for analysis of DC and AC circuits. • **CO2:** Apply suitable network theorems and analyze AC and DC circuits. • **CO3:** Analyse steady state response of any R, L and C circuits. • **CO4:** Analyse the transient response for any RC, RL and RLC circuits and frequency response of parallel and series resonance circuits. • **CO5:** Analyze the coupled circuits and network topologies.

23		CS3251	PROGRAMMING IN C	• **CO1**- Demonstrate knowledge on C Programming constructs. • **CO2**-Develop simple applications in C using basic constructsand implement applications using arrays and strings. • **CO3**-Develop and implement modular applications in C using functions. • **CO4**-Develop applications in C using structures and pointers. • **CO5**–Design applications using sequential and random access file processing.
24		AD3251	DATA STRUCTURES DESIGN	• **CO1**- To understand the concepts of ADTs. • **CO2**- To design linear data structures – lists, stacks, and queues. • **CO3**- To understand sorting, searching and hashing algorithms. • **CO4**- To apply Tree Structures to solve computational problems. • **CO5**– To apply Graph structures to solve computational problems.
25		AD3271	DATA STRUCTURES DESIGN LABORATORY	• **CO1**-.To implement ADTs as Python classes. • **CO2**- To design, implement and analyze linear data structures, such as lists, queues, and stacks, according to the needs of different applications. • **CO3**- To design, implement and analyze algorithms for searching, indexing, and sorting. • **CO4**- To design and implement efficient tree data structures to solve problems. • **CO5**–To model problems as graph problems and implement efficient graph algorithms to solve them.
26		BE3252	BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING	• **CO1:** Compute the electric circuit parameters for simple problems. • **CO2:** Explain the concepts of domestics wiring and protective devices. • **CO3:** Explain the working principle and applications of electrical machines. • **CO4:**Analyze the characteristics of analog electronic devices. • **CO5:** Explain the types and operating principles of sensors and transducers.
27		CS3271	PROGRAMMING IN C LABORATORY	• **CO1:** Demonstrate knowledge on C programming constructs. • **CO2:** Develop programs in C using basic constructs. • **CO3:** Develop programs in C using arrays. • **CO4:** Develop applications in C using strings, pointers and functions. • **CO5:** Develop applications in C using structures and file processing.

28		GE3271	ENGINEERING PRACTICES LABORATORY	**CO1:** Draw pipe line plan; lay and connect various pipe fittings used in common household plumbing work; Saw; plan; make joints in wood materials used in common household wood work. **CO2:** Wire various electrical joints in common household electrical wire work. **CO3:** Weld various joints in steel plates using arc welding work; Machine various simple processes like turning, drilling, tapping in parts; Assemble simple mechanical assembly of common household equipments; Make a tray out of metal sheet using sheet metal work. **CO4:** Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB. **CO5:** Study the various electrical wirings like staircase wiring, florescent wiring and power measurement using energy meter.
29		BE3272	BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING LABORATORY	**CO1:** Use experimental methods to verify the Ohm's law and Kirchhoff's Law. **CO2:**Analyze experimentally the load characteristics of electrical machines. **CO3:**Analyze the characteristics of basic electronic devices. **CO4:** Use LVDT to measure displacement. **CO5:** Use experimental methods to measure three phase power.
30		EC3271	CIRCUIT ANALYSIS LABORATORY	**CO1**: Ability to understand verify KVL & KCL **CO2**: Ability to understand and apply circuit theorems and concepts in engineering applications. **CO3**: Ability to understand Series and Parallel Resonance Circuits **CO4**: Ability to understand RL and RC Transient Circuits **CO5:** Design RL and RC circuits
31		BE3271	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LABORATORY	**CO1:** Use experimental methods to verify the Ohm's and Kirchhoff's Laws. **CO2**: Analyze experimentally the load characteristics of electrical machines. **CO3:**Analyze the characteristics of basic electronic devices. **CO4:** Use DSO to measure the various parameters. **CO5:** Analyze the characteristics of logic gates, binary adder and Subtractor.
32		BE3273	BASIC ELECTRICAL, ELECTRONICS ENGINEERING AND MEASUREMENTS LABORATORY	**CO1:** Use experimental methods to verify the Ohm's and Kirchhoff's Laws. **CO2:**Analyze experimentally the load characteristics of electrical machines. **CO3:**Analyze the characteristics of basic electronic devices. **CO4:** Use DSO to measure the various parameters. **CO5:** Analyse the characteristics of operational amplifier.

| 33 | | GE3252 | தமிழரும்தொழில்நுட்பமும் / TAMILS AND TECHNOLOGY | • **CO1:** ¦¿º× ÁüÚõ À¡¨Éò ¦¾¡Æ¢øÑðÀõ ÀüÈ¢ ¦¾¡¢óÐ ¦¸¡ûÙ¾ø
• Understandthe knowledge about Weaving and Ceramic Technology in Sangam Age
• **CO2:**ÅÊÅ¨ÁôÒÁüÚõ ¸ðÊ¼ò ¦¾¡Æ¢øÑðÀò¾¢ø ¾Á¢¢Æ÷¸Ç¢ýÀ¡Ì
• Understand the Knowledge about Design and Construction Technology in Sangam Age
• **CO3:** ¯üÀò¾¢ò ¦¾¡Æ¢øÑðÀò¾¢ø ¾Á¢¢Æ÷¸Ç¢ý ®ÎÀ¡Î
• Role of Tamils in Manufacturing Technology.
• **CO4:** §ÅÇ¡ñ¨ÁÁüÚõ ¿£÷ôÀ¡ºÉò ¦¾¡Æ¢øÑðÀò¾¢ø ¾Á¢¢Æ÷¸Ç¢ýÀ¡Ì
• Knowledge about Agriculture and Irrigation Technology during Sangam Age.
• **CO5:** «È¢Å¢Âø ¾Á¢¢ú ÁüÚõ ¸½¢É¢ò¾Á¢¢Æ¢ý ÅÇ÷îº¢
• Understand the development of Scientific Tamil & Tamil Computing. |
| 34 | | GE3272 | **COMMUNICATION LABORATORY** | • **CO1:** Speak effectively in group discussions held in a formal/semi-formal context.
• **CO2:** Discuss, analyze and present concepts and problems from various perspectives to arrive at suitable solutions.
• **CO3:** Write emails, letters and effective job applications.
• **CO4:** Write critical reports to convey data and information with clarity and precision.
• **CO5:** Give appropriate instructions and recommendations for safe execution of tasks. |