

K.S. Rangasamy College of Technology

(Autonomous)

Accredited by NAAC with 'A++' Grade,

Approved by AICTE, Affiliated to Anna University, Chennai



Curriculum & Syllabi

of

**B.E. Electronics Engineering
(VLSI Design and Technology)**

(For the Batch Admitted in 2026 - 27)

R 2026

**(Industry-Integrated, Skill-Based,
Practical-Oriented, Project-Based
and SDG-Aligned Curriculum)**

**KSR Kalvi Nagar, Tiruchengode - 637 215.
Namakkal District, Tamil Nadu, India**

K.S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE -637215
(An Autonomous Institution, Affiliated to Anna University, Chennai)

CURRICULUM - R2026
B.E Electronics Engineering
(VLSI Design and Technology)
(For the Batch Admitted in 2026 - 27)

SEMESTER I												
S.No.	Course Code	Course Title	Category	Hours / Semester					C	Max. Marks		
				CI		LI P	TW / SL	TH		CA	ES	TM
				L	T							
Induction Programme			-	-	-	-	--	-	0	-	-	-
THEORY COURSES												
1.	26MAC02T	Vector Space and Ordinary Differential equations	BS	45	15	0	60	120	4	40	60	100
2.	26PHC01T	Applied Physics	BS	45	0	0	45	90	3	40	60	100
3.	26CSC01T	Problem Solving using C	ESc	45	0	0	45	90	3	40	60	100
4.	26EV101T	Electronic Devices	PC	45	0	0	45	90	3	40	60	100
5.	26TAC01T	Heritage of Tamils / தமிழ்மரபு	HS	15	0	0	15	30	1	100	0	100
THEORY WITH LABORATORY COURSES												
6.	26 ENC01I	English Essentials-I	HS	15	0	30	15	60	2	50	50	100
LABORATORY COURSES												
7.	26CSC01L	Problem Solving using C Laboratory	ESc	0	0	45	0	45	1.5	60	40	100
8.	26PHC01L	Applied Physics Laboratory	BS	0	0	30	0	30	1	60	40	100
9.	26EV101L	Electronic Devices Laboratory	PC	0	0	45	0	45	1.5	60	40	100
10.	26EEC02L	Design Thinking and Innovation Laboratory	ESc	0	0	15	15	30	1	60	40	100
EMPLOYABILITY ENHANCEMENT COURSES												
11.	26TPC01P	Career Skill Development-I	CG	0	0	30	0	30	1*	100	0	100
MANDATORY COURSES												
12.	26MYC01T	Universal Human Values	MY	15	15	0	60	90	3*	100	0	100
Total				225	30	195	300	750	21	1000		

* Career Skill Development-I - additional credit is offered not accounted for CGPA

* Universal Human Values 3 additional credits and not accounted for CGPA

Mandatory Additional Credit SDG Courses

S.No.	Course Code	Mandatory Non-Credit Skilling Course	SDGs addressed	Category	CI		LI	TW / SL	TH	C	Max Marks		
					L	T	P				CA	ES	TM
1.	26MSDGC01	Mandatory Additional Credit SDG Courses – 1	SDG 1 to 9	MAC	18	0	0	12	30	1	100	0	100

Note:

CI - Classroom Instructions; LI - Laboratory Instructions; L - Lecture; T - Tutorial;

P - Practical; TW - Term Work; SL - Self Learning; TH - Total Hours; C - Credit;

CA - Continuous Assessment; ES - End Semester; TM - Total Marks

Passed in BoS Meeting held on 04/05/2026

Approved in Academic Council Meeting held on 13/06/2026

h. samir
Chairman - Board of Studies
Department of Electronics Engineering
(VLSI Design and Technology)
K.S.Rangasamy College of Technology
Tiruchengode - 637 215.

Syllabus									
K.S.Rangasamy College of Technology - Autonomous R2026									
B.E. (Common to ECE, EEE, EE (VLSI DT) and R&A)									
26MAC02T - Vector Space and Ordinary Differential Equations									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW /SL	TH		C	CA	ES
	L	T	P						
I	45	15	0	60	120	4	40	60	100
Vector Space* Vector Space - Subspace - Row and Column Space - Linear Combinations - Linear Independence and Linear Dependence - Basis and Dimension - Range space and Null space.									[9]
Laplace Transform* Sufficient Conditions for Existence - Transform of elementary functions - Transform of derivatives - Integrals of transforms - Initial and final value theorem - Transform of periodic functions.									[9]
Differential Calculus * Representation of Functions - Limit of a Function - Continuity - Derivatives - Differentiation Rules (Sum, Product, Quotient, Chain Rules) - Successive Differentiation-Leibnitz's Theorem - Maxima and Minima of One Variable.									[9]
Functions of Several Variables* Partial Differentiation - Homogeneous Functions and Euler's Theorem - Jacobians - Taylor's Series for Functions of Two Variables - Applications: Maxima and Minima of Functions of Two Variables - Constrained Maxima and Minima: Lagrange's Method of Undetermined Multipliers									[9]
Ordinary Differential Equations* Linear Differential Equations of Second and Higher Order with Constant Co-efficient - R.H. S is of the form e^{ax} , $\sin ax$, $\cos ax$, x^n , $n > 0$ - Differential Equations with Variable Coefficients: Cauchy's and Legendre's form of Linear Equations - Method of Variation of Parameters.									[9]
Total Hours: (Lecture - 45 + Tutorial - 15)									60
Text Book(s):									
1.	Kreyszig Erwin, "Advanced Engineering Mathematics", John Wiley and Sons (Asia) Limited, 10 th Edition, 2022.								
2.	Grewal B. S., "Higher Engineering Mathematics", Khanna Publishers Delhi, 44 th Edition, 2017.								
Reference(s):									
1.	Dass H. K., "Higher Engineering Mathematics", S.Chand & Company Ltd, New Delhi, 3 rd (Revised) Edition, 2014.								
2.	Veerarajan T., "Engineering Mathematics", for Semesters I & II, Tata McGraw Hill Publishing Co., 1 st Edition, New Delhi, 2019.								
3.	Gilbert Strang, "Linear Algebra and Its Applications", Brooks/Cole/Cengage, 4th Edition ,2021								
4.	Glyn James, Phil Dyke, "Modern Engineering Mathematics", Pearson Education, 6 th Edition ,2020								
SDG No(s): *4									


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K.S.Rangasamy College of Technology
Tiruchengode - 637 215, Namakkal-Dt.

Syllabus

K.S.Rangasamy College of Technology-Autonomous R2026										
B.E. / B.Tech. (Common to CSE, CSE(AI&ML) ECE, EEE, EE(VLSIDT), AI&DS and IT)										
26PHC01T - Applied Physics										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
I/II	45	0	0	45	90	3	40	60	100	
Band Theory of Solids** Origin of energy bands - Classification of solids based on electrical properties and energy band gap - Semiconductors and doping-Carrier concentration of electrons and holes in intrinsic semiconductors-Extrinsic semiconductors (Qualitative) - Hall effect - Determination of Hall coefficient - Theory of p-n junctions - Applications: Photovoltaic Cells, LEDs. Case study: AI assisted fault detection in LED devices based on electrical characteristics										[9]
Laser and Fiber Optics** Interaction of light with matter - Expression for energy density at thermal equilibrium in terms of Einstein's coefficients - Characteristics of laser - Requisites of laser system - semiconductor and CO ₂ laser - Applications of lasers in computing and data technology - Optical fibre - Principle of working - Types - Acceptance angle and numerical aperture - Application-Fiber optic communication. Case study: Simulation of light propagation through in an optical fibers using MATLAB										[9]
Heat Transfer Mechanisms* Temperature, Heat, and Internal energy - Thermal expansion of solids and liquids - Modes of heat transfer - Heat conduction through a compound media (series and parallel) - Determination of thermal conductivity of bad conductor-Convection - application in science and domestic - Solving problems - Stefan-Boltzmann law of radiation - Experimental determination of Stefan's constant. Case study: Energy-efficient thermal management in smartphones using heat transfer principles										[9]
Magnetism and Sensor Technology** Origin of magnetic moment - Classification of magnetic materials-Hysteresis based on Domain theory - soft and hard magnetic materials-Types of sensors - GMR sensor - Industrial automation and robotics - Resistive sensor: Humidity measurement-Pressure sensing by capacitive and flex method - Piezoelectric transducers - Distance measurement (pulse - echo) and velocity of fluid. Case Study: Smart agricultural monitoring using resistive humidity sensors and AI										[9]
Quantum Computing** History of quantum computing and quantum information - Classical and quantum computing - Core principles of quantum computing - Quantum system for information processing - Qubit - Qubit logic gates- Classical bits - Qubit as a two-level system - Quantum computing advantages and limitations - Applications - Global perspectives - Future directions Case Study: Quantum computing for drug discovery and materials science										[9]
								Total Hours:	45	
Text Book(s):										
1.	Halliday. D., Resnick. R., and Walker.J., "Fundamentals of Physics", John Wiley & Sons, Inc., New York, 12 th Edition, 2022									
2.	Nielsen M.A. and Chuang.I., "Quantum Computation and Quantum Information", Cambridge University Press, 2010.									
Reference(s):										
1.	Malik H. K., Singh A.K., "Engineering Physics" McGraw Hill Education Private Limited, New Delhi, 2018.									
2.	Laud.B.B., "Lasers and Non-Linear Optics" New Age International Publications, New Delhi,2015									
3.	Michael A, Nielsen and Isaac L Chuang "Quantum Computation and Quantum Information" Cambridge University Press, UK, 2010.									
4.	Coey J.M.D., "Magnetism and Magnetic Materials" Cambridge University Press, UK, 2010.									
SDG No(s): *7. **9.										



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**Faculty of Science and Humanities
K.S.Rangasamy College of Technology
Tiruchengode - 637 215, Namakkal-Dt.**

Passed in BoS Meeting held on 04.06.2026

Approved in Academic Council Meeting held on 13.06.2026

Syllabus

K.S.Rangasamy College of Technology - Autonomous R2026									
B.E. (Common to ECE, EEE, EE(VLSIDT) and MCT)									
26CSC01T- Problem Solving using C									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
I / II	45	0	0	45	90	3	40	60	100
Computational Thinking and C Fundamentals* Problem solving techniques - Algorithm - Flowchart - Pseudocode - Structure of a C program - Compilation process - Data types - Variables - Constants - Operators and expressions - Console I/O - Debugging basics (syntax and logical errors).									[9]
Control Structures, Arrays and Strings* Conditional statements - if, if-else, nested if - switch case - Looping: while, do-while, for loops - break, continue, One-dimensional arrays - Two-dimensional arrays - Matrix operations - Strings - String handling functions									[9]
Pointers and Functions * Pointer variables - Memory visualization concepts - Pointer arithmetic - Pointers and arrays - Dynamic memory allocation. Functions - Function prototypes - Call by value and reference - Recursion - Passing arrays to functions.									[9]
Structures, Unions, Enumerations, Typedef and Preprocessors* Structures - Introduction to Structures and Initialization - Arrays of Structures- Arrays and Structures, Nested Structures - Passing Structures to Functions - Structure Pointers - Unions - Bit Fields - Enumerations - typedef -The preprocessor and commands.									[9]
File Handling* File: Streams - Reading and Writing Characters - Reading and Writing Strings - File System functions - File Manipulation-Sequential access - Random Access Files - Command Line arguments - Simple application development in C.									[9]
Total Hours:									45
Text Book(s):									
1.	Herbert Schildt, "The Complete Reference C", 4 th Edition, Tata McGraw Hill Edition, 2010.								
2.	Brian W. Kernighan and Dennis M. Ritchie, "C Programming Language", Prentice-Hall.								
Reference(s):									
1.	Balagurusamy E, "Programming in ANSI C", 8 th Edition, Tata McGraw Hill Edition, New Delhi, 2019.								
2.	Byron Gottfried, "Programming with C", 4 th Edition, McGraw Hill Education, 2018								
3.	ReemaThareja, "Computer Fundamentals and Programming in C", 2 nd Edition, Oxford Higher Education, 2016.								
4.	Duraisamy K., Nallusamy R., Kanagavalli R., Ponmathangi S., Muthusankar D., Kaladevi P. "Fundamentals of Programming", Techvision Publishers, 2008.								
SDG No(s): 4									

Passed in BoS Meeting held on 06.05.2026

Approved in Academic Council Meeting held on 13.06.2026


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Board of Studies
 Department of Computer Science and Engineering
 K. S. Rangasamy College of Technology
 Tiruchengode - 637 215, Namakkal-Dt

Syllabus									
K.S.Rangasamy College of Technology - Autonomous R2026									
B.E - Electronics Engineering (VLSI Design and Technology)									
26EV101T - Electronic Devices									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
I	45	0	0	45	90	3	40	60	100
Semiconductor Diode Review of Properties of Semiconductor Materials - Theory of PN Junction Diode and Zener diode - V-I Characteristics and its Temperature dependence - Break down mechanisms - Diode Resistance and Capacitance - Diode Models - Rectifiers - Clipper - Clamper - Voltage regulator - Tunnel Diode and Varactor Diode									[9]
Bipolar Junction Transistor Transistor types - Transistor Action - Current Components - Ebers Moll Model - Configurations - Transistor as a Switch and Amplifier - Small Signal Low Frequency Hybrid Model - DC and AC Load Lines - Operating Point - Bias stability, Biasing Methods and Bias Compensation.									[9]
Field Effect Transistor* JFET and its Characteristics - JFET parameters and Configurations - MOSFET - Types - V-I Characteristics - Principle of operation - MOSFET Biasing - MOS Capacitor - MOSFET as switch - Comparison of FET and BJT									[9]
CMOS NMOS and PMOS transistors and their characteristics - Threshold voltage - MOS device equations - Second order effects - small signal MOS model									[9]
Power and Opto Electronic Devices Thyristor Families - SCR, DIAC, TRIAC - Operation and their Characteristics - Application - UJT-Operation - Characteristics - Equivalent Circuit - Applications - Opto Electronic Devices - Photoconductive, Photovoltaic, Photo-emissive Sensors - Laser diode - Photo diodes - Photo Transistors - Light emitters - Liquid Crystal Displays - Plasma and HDTV									[9]
Total Hours (Lecture - 45, Term Work-45)									45
Text Book(s):									
1.	Millman J. and Halkias C. C. "Electronic Devices and Circuits ", Tata McGraw Hill, New Delhi, 2011.								
2.	Floyd T. L "Electronic Devices and Circuits", Pearson Education., New Delhi, 2011								
Reference(s):									
1.	Boylestad, R. L. and Nashelsky, L. "Electronic Devices and Circuit Theory ", Pearson Education, New Delhi, 2012								
2.	David A.Bell "Electronic Devices and Circuits", Prentice Hall of India., 2008								
3.	Robert T.Paynter "Introductory Electronic Devices and Circuits", Pearson Education., USA, 2009								
4.	Neil.H.E.Weste, Kamran Eshranghian "Principles of CMOS VLSI Design- A system perspective", Addison Wesley., New Delhi, 2 nd Edition, 2009.								
SDG No(s): 9									

Passed in BoS Meeting held on 04/05/2026
 Approved in Academic Council Meeting held on 13/06/2026

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Syllabus

K.S.Rangasamy College of Technology – Autonomous R2026

B.E. / B.Tech. (Common to All Branches)

26TAC01T - Heritage of Tamils

Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
I	15	0	0	15	30	1	100	0	100	
Language and Literature*** Language Families in India - Dravidian Languages - Tamil as a Classical Language Classical Literature in Tamil - Secular Nature of Sangam Literature Distributive Justice in Sangam Literature - Management Principles in Thirukural - Tamil Epics and Impact of Buddhism & Jainism in Tamil Land - Bakthi Literature Azhwars and Nayanmars - Forms of minor Poetry - Development of Modern literature in Tamil - Contribution of Bharathiyar and Bharathidhasan.										[3]
Heritage - Rock Art Paintings to Modern Art - Sculptures** Hero stone to modern sculpture - Bronze icons - Tribes and their handicrafts Art of temple car making - Massive Terracotta sculptures, Village deities, Thiruvalluvar Statue at Kanyakumari, Making of musical instruments - Mridhangam, Parai, Veenai, Yath and Nadhaswaram Role of Temples in Social and Economic Life of Tamils.										[3]
Folk and Martial Arts* Therukoothu, Karagattam, Villu Pattu, Kaniyan Koothu, Oyillattam, Leatherpuppetry, Silambattam, Valari, Tiger dance - Sports and Games of Tamils.										[3]
Thinai Concept of Tamils** Flora and Fauna of Tamils & Aham and Puram Concept from Tholkappiyam and Sangam Literature - Aram Concept of Tamils Education and Literacy during Sangam Age - Ancient Cities and Ports of Sangam Age - Export and Import during Sangam Age -Overseas Conquest of Cholas.										[3]
Contribution of Tamils to Indian National Movement and Indian Culture** Contribution of Tamils to Indian Freedom Struggle - The Cultural Influence of Tamils over the other parts of India - Self-Respect Movement - Role of Siddha Medicine in Indigenous Systems of Medicine - Inscriptions & Manuscripts - Print History of Tamil Books.										[3]
Total Hours:									15	
Text Book(s):										
1.	தமிழக வரலாறு - மக்களும் பண்பாடும் கே. கே. பிள்ளை (வெளியீடு தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).									
2.	கணினித்தமிழ் முனைவர் இல. சுந்தரம் (விகடன் பிரசுரம்).									
Reference(s):										
1.	கீழடி - வைகை நதிக்கரையில் சங்ககால நகரநாகரீகம் (தொல்லியல் துறை வெளியீடு).									
2.	பொருளை ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).									
3.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL- (in print).									
4.	Historical Heritage of the Tamils (Dr.S.V.Subaramanian, Dr.K.D.Thirunavukkarasu) (Published by: International Institute of Tamil Studies).									
SDG No(s): *3,**4,***11										



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Passed in BoS Meeting held on 04.06.2026

Approved in Academic Council Meeting held on 13.06.2026

Syllabus										
K.S.Rangasamy College of Technology – Autonomous R2026										
B.E. / B.Tech. (அனைத்து துறைகளுக்கும் பொதுவானது)										
26TAC01T - தமிழர்மரபு										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
1	15	0	0	15	30	1	100	0	100	
மொழி மற்றும் இலக்கியம்... இந்திய மொழிக் குடும்பங்கள் - திராவிட மொழிகள் - தமிழ் ஒரு செம்மொழி தமிழ் செவ்விலக்கியங்கள் சங்க இலக்கியத்தின் சமயச் சார்பற்ற தன்மை சங்க இலக்கியத்தில் பகிர்தல் அறம் - திருக்குறளில் மேலாண்மைக் கருத்துக்கள் - தமிழ்க் காப்பியங்கள், தமிழகத்தில் சமண, பௌத்த சமயங்களின் தாக்கம் பக்தி இலக்கியம், ஆழ்வார்கள் மற்றும் நாயன்மார்கள் - சிற்றிலக்கியங்கள் - தமிழில் நவீன இலக்கியத்தின் வளர்ச்சி -தமிழ் இலக்கிய வளர்ச்சியில் பாரதியார் மற்றும் பாரதிதாசன் ஆகியோரின் பங்களிப்பு.										[3]
மரபு பாறை ஓவியங்கள் முதல்நவீன ஓவியங்கள் வரை- சிற்பக் கலை.. நடுகல் முதல் நவீன சிற்பங்கள் வரை - ஐம்பொன் சிலைகள் பழங்குடியினர் மற்றும் அவர்கள் தயாரிக்கும் கைவினைப் பொருட்கள், பொம்மைகள் - தேர் செய்யும் கலை - சுடுமண் சிற்பங்கள் - நாட்டுப்புறத் தெய்வங்கள் - குமரிமுனையில் திருவள்ளுவர் சிலை - இசைக் கருவிகள் மிருதங்கம், பறை, வீணை, யாழ், நாதஸ்வரம் - தமிழர்களின் சமூக, பொருளாதார வாழ்வில் கோவில்களின் பங்கு.										[3]
நாட்டுப்புறக் கலைகள் மற்றும் வீர விளையாட்டுகள்.. தெருக்கூத்து, கரகாட்டம், வில்லுப்பாட்டு, கணியான் கூத்து, ஓயிலாட்டம், தோல்பாவைக் கூத்து, சிலம்பாட்டம்,வளரி, புலியாட்டம், தமிழர்களின் விளையாட்டுகள்.										[3]
தமிழர்களின் திணைக் கோட்பாடுகள்.. தமிழகத்தின் தாவரங்களும், விலங்குகளும் -தொல்காப்பியம் மற்றும் சங்க இலக்கியத்தில் அகம் மற்றும் புறக் கோட்பாடுகள் - தமிழர்கள் போற்றிய அறக்கோட்பாடு - சங்ககாலத்தில் தமிழகத்தில் எழுத்தறிவும், கல்வியும் சங்ககால நகரங்களும் துறைமுகங்களும் - சங்ககாலத்தில் ஏற்றுமதி மற்றும் இறக்குமதி - கடல்கடந்த நாடுகளில் சோழர்களின் வெற்றி.										[3]
இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண்பாட்டிற்குத் தமிழர்களின் பங்களிப்பு.. இந்திய விடுதலைப்போரில் தமிழர்களின் பங்கு - இந்தியாவின் பிறப்பகுதிகளில் தமிழ்ப் பண்பாட்டின் தாக்கம் -சுயமரியாதை இயக்கம் -இந்திய மருத்துவத்தில், சித்த மருத்துவத்தின் பங்கு - கல்வெட்டுகள் கையெழுத்துப்படிக்க - தமிழ்ப் புத்தகங்களின் அச்ச வரலாறு.										[3]
Total Hours:									15	
Text Book(s):										
1.	தமிழக வரலாறு - மக்களும் பண்பாடும் கே. கே. பிள்ளை (வெளியீடு தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).									
2.	கணினித்தமிழ் முனைவர் இல. சுந்தரம் (விகடன் பிரசுரம்).									
Reference(s):										
1.	கீழடி- வைகை நதிக்கரையில் சங்ககால நகர நாகரீகம் (தொல்லியல் துறை வெளியீடு).									
2.	பொருளை ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).									
3.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL- (in print).									
4.	Historical Heritage of the Tamils (Dr.S.V.Subaramanian, Dr.K.D.Thirunavukkarasu) (Published by: International Institute of Tamil Studies).									
SDG No(s): *3,**4,***11										

Syllabus									
K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. / B.Tech. (Common to all Branches)									
26ENC01I – English Essentials-I									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
I	15	0	30	15	60	2	50	50	100
Basics of Communication* Listening –Note-taking & gap filling Speaking - Self-Introduction, Role play Reading –Bio-note Writing – Personal profile Grammar – Simple present tense, Present continuous tense, Asking questions (wh-questions) Vocabulary – One word substitution, Synonyms									[9]
Narration* Listening –Travel podcast / Watching a travel documentary Speaking - Narrating one's personal experience in front of a group (formal and informal context) Reading – A tourist brochure and planning an itinerary, descriptive article/excerpt from literature Writing – Narrative (Event, personal experience, etc.) Grammar – Subject-verb agreement, Simple past, Past continuous Tenses Vocabulary – Antonyms, Word formation (Prefix and Suffix)									[9]
Description* Listening – Conversation, Radio/TV advertisement Speaking - Small talk (JaM), Turn-taking and Turn-giving Reading – An excerpt from a travelogue, Newspaper Report Writing – Definitions, Descriptive writing, Checklists Grammar – Future tense, Perfect tenses, Prepositions Vocabulary – Adjectives and Adverbs									[9]
Classification* Listening – Announcements and filling a table Speaking - Giving short speeches on topics like College Clubs and their activities in the college / Campus Facilities / native place and its major attractions. Reading – An article, social media posts and classifying (channel conversion – text to table) Writing – Note making and Summarizing, a classification paragraph; Grammar – Connectives, Transition words Vocabulary – Contextual meanings of vocabulary, Same words used as different parts of speech, Scientific and Technical vocabulary									[9]
Expression of Views* Listening – Debate / Discussion Speaking - Group discussion and Debating Reading – Formal letters, Letters to Editor, Opinion articles / Blogs Writing –Letter writing/E-mail writing (Enquiry/Permission, Letter to Editor) Grammar –Question tags, embedded questions, Yes / No questions Vocabulary – Compound words, Phrasal verbs.									[9]
Total Hours (Lecture -15 Hrs, Practice-30 Hrs and Self Learning – 15 Hrs)									60
Text Book(s):									
1.	“English for Engineers and Technologists” Volume I & II by Orient Blackswan, 2022								
2.	Louis Trimble, “English for Science &Technology-I” by Cambridge University Press, 1985								
Reference(s):									
1.	Jack C. Richards, “Interchange”, Cambridge University Press, Fifth Edition, 2017.								
2.	Adrian Wallwork, “English for Academic Correspondence and Socializing” Springer, 2011.								
3.	Stella Cortrell, “The Study Skills Handbook” Red Globe Press, 2019								
SDG No(s): *4									

Passed in BoS Meeting held on 04.06.2026
 Approved in Academic Council Meeting held on 13.06.2026


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K.S.Rangasamy College of Technology - Autonomous R2026									
B.E. (Common to ECE, EEE, EE(VLSIDT) and MCT)									
26CSC01L - Problem Solving using C Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
I / II	0	0	45	0	45	1.5	60	40	100
List of Experiments:									
1. Develop algorithms, flowcharts, and C programs for simple computational problems involving engineering calculations. 2. Implement decision-making applications using if-else and switch statements for engineering-related computations 3. Develop programs using iterative constructs (for, while, do-while) to solve computational and data processing problems. 4. Implement applications using 1D and 2D arrays to process and analyze numerical data 5. Implement programs for handling textual data using strings and string handling functions. 6. Develop record management applications using pointers and dynamic memory allocation. 7. Implement modular solutions using functions and recursion for mathematical and engineering problems. 8. Develop applications using structures and unions to organize and process related engineering data. 9. Implement applications using type def, enumerated data types and preprocessor directives 10. Implement file handling applications to store, retrieve, update, and generate reports from data records. 11. Micro Project for problem solving using C Programming concepts.									
Tools / Software used: Code: Blocks IDE / Dev-C++ / Visual Studio Code / Online Programming Platform.									
SDG No(s): 4									

Course Designer(s)

Dr.P.Kaladevi - kaladevi@ksrct.ac.in

Passed in BoS Meeting held on 06.05.2026

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K.S.Rangasamy College of Technology-Autonomous R2026									
B.E. / B.Tech. (Common to CSE, CSE(AI&ML) ECE, EEE, EE(VLSIDT), AI&DS and IT)									
26PHC01L - Applied Physics Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
I/II	0	0	30	0	30	1	60	40	100
List of Experiments:									
Activity:									
Lab Manual									
SDG No(s): 4									

Course Designer(s)

1. Dr. V. Vasudevan - vasudevanv@ksrct.ac.in
2. Dr. P. Suthanthirakumar - suthanthirakumar@ksrct.ac.in


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K.S.Rangasamy College of Technology - Autonomous R2026									
B.E - Electronics Engineering (VLSI Design and Technology)									
26EV101L - Electronic Devices Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
I	0	0	45	0	45	1.5	60	40	100
List of Experiments*:									
1. V-I Characteristics of PN Junction Diode and Determination of Diode Parameters 2. V-I Characteristics and Voltage Regulation using Zener Diode 3. Design and Analysis of Diode Rectifier, Clipper and Clamper Circuits 4. Study of BJT Characteristics in CE Configuration and Determination of Operating Point 5. BJT as an Amplifier and Switch - Analysis of Biasing and Gain 6. Experimental Study of JFET and MOSFET Characteristics 7. MOSFET as a Switch and CMOS Inverter Characteristics 8. Characteristics and Application of SCR 9. Characteristics and Application of UJT 10. Experimental Study of Photodiode and Phototransistor									
Activity:									
• Develop a mini project that integrates the studied electronic devices to solve a simple real-world problem through practical implementation and analysis.									
Lab Manual									
1.	"Semiconductor Physics and Devices Laboratory Manual", Department of Electronics Engineering (VLSI Design and Technology), KSRCT.								
SDG No(s): *9									

Course Designer(s)

1. Mr.D.Poornakumar - poornakumard@ksrct.ac.in

Syllabus

Synabus

K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. / B.Tech. (Common to All Branches)									
26EEC02L – Design Thinking and Innovation Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
I/II	0	0	15	15	30	1	60	40	100
Design Thinking Process and Problem Identification Introduction to Design, Design Thinking and Innovation - Stages of Design Thinking Process. Tool: Field visit, Brain-storming and Mind-mapping; Identification and selection of problem to solve.									[6]
Selection of Problem Information Gathering: from past and existing, Ask questions: Why, who, what, where, when, how. Tool: 5Ws and 1H Matrix Table.									[6]
Primary research on Problem Space User Participant Mapping - AEIOU framework (Activities, Environment, Interaction, Objects, Users). Tool: Observation, Conversations, Questionnaires with user. Define the problem statement with primary and secondary objectives. Tool: Personas, journey mapping and Observations, Inference, Opportunities, and Recommendations (OIOR).									[6]
Ideation Generating Creative ideas. Tool: Idea Sketching, Metaphor, RAT, SCAMPER, Creativity and Lateral thinking. Develop concept maps and evaluate ideas based on defined objectives and user feedback.									[6]
Soft Prototyping Soft Prototyping - Paper Prototype (low-fidelity), Scenarios and Storyboarding, MVP (Minimum Viable Product).									[6]
Total Hours:								30	
Reference(s):									
1.	NPTEL: Design Thinking and Innovation by Prof. Ravi Poovaiah, IDC School of Design, IIT Bombay, https://onlinecourses.swayam2.ac.in/aic23_ge17/preview , https://dsource.in/dti .								
2.	NPTEL: Innovation by Design by Prof. B. K. Chakravarthy, IDC School of Design, IIT Bombay, https://onlinecourses.swayam2.ac.in/aic19_de02/preview .								
3.	Arun Jain, “UnMukt – Science and Art of Design Thinking”, Intellect School of Design Thinking, 2020								
4.	www.dsource.in , The Resource for Design by e-Kalpa Design Team, IDC, IIT Bombay, DoD, IIT Guwahati & NID, Bengaluru								
SDG No(s): 4									

Course Designer(s)

1. Dr.C.Rajasekaran – rajasekaran@ksrct.ac.in

Syllabus									
K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. / B.Tech. (Common to All Branches)									
26TPC01P - Career Skill Development-I									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
I	0	0	30	0	30	1	100	0	100
Logical Reasoning** Inductive Reasoning - Analogies - Alpha and numeric series - Number Series – odd man out - Coding and Decoding - Order and Ranking - Direction and distance									[6]
Quantitative Aptitude – Part 1** Number system - Squares & cubes - Divisibility - Unit digits - Remainder Theorem - HCF & LCM - Geometric and Arithmetic progression - Powers & Exponents									[6]
Verbal & Analytical Reasoning** Blood Relations and Coded Relations - Seating Arrangements – Analytical Reasoning (PUZZELS) – Coded Inequality									[6]
Quantitative Aptitude – Part 2** Average - Ratio and proportion – Ages – Partnership– Percentage - Profit & loss – Discount - Mixture and Allegation									[6]
Quantitative Aptitude – Part 3** Time & Work - Pipes and cistern – Time, Speed & distance - Trains - Boats and Streams - Simple interest and Compound interest.									[6]
Total Hours:									30
Text Book(s):									
1.	Aggarwal, R.S. "Quantitative Aptitude for Competitive Examinations (Latest Edition 2024-2025)" S.Chand & Co Ltd., New Delhi.								
2.	Aggarwal, R.S. 'A Modern Approach to Verbal and Non-verbal Reasoning', Revised Edition 2026, S.Chand & Co Ltd., New Delhi.								
Reference(s):									
1.	Dinesh Khattar, 'Quantitative Aptitude For Competitive Examinations', Pearson Education 2020								
2.	Anne Thomson, 'Critical Reasoning: A Practical Introduction' Lexicon Books, 3 rd edition, 2022. Warsaw								
SDG No(s): *4, **8									



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Syllabus									
K.S.Rangasamy College of Technology – Autonomous R2026									
Common to all Branches									
26MYC01T - Universal Human Values									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
I	15	15	0	60	90	3*	100	0	100
Introduction to Value Education Understanding Value Education- Self-exploration as the process for value education- Continuous happiness and prosperity-the basic human aspirations-right understanding-relationship and physical facility –happiness and prosperity - current scenario – method to fulfil the basic human aspirations									[3]
Harmony in the Human Being * Understanding the human being as the Co-Existence of the self and the Body - Distinguishing between the needs of the self and the body-the body as an instrument of the self- understanding harmony in the self- harmony of the self with the body – programme to ensure self-regulation and health.									[3]
Harmony in the Family and Society Harmony in the Family –the basic unit of human interaction-values in human- to - human relationship –‘Trust’ the foundation value in relationship –‘ Respect’ as the right evaluation- understanding harmony in the society –vision for the universal human order.									[3]
Harmony in the Nature/Existence ** Understanding harmony in the Nature-Interconnectedness, self-regulation and mutual fulfilment among the four orders of nature – realizing existence as co-existence at all levels – the holistic perception of harmony in existence.									[3]
Implications of the Holistic Understanding Natural Acceptance of human values- definitiveness of human conduct- a basis for humanistic education, humanistic constitution and universal human order- competence in professional ethics –holistic technologies, production systems and management models-typical case studies – strategies for transition towards value-based life and profession									[3]
Total Hours: (Lecture -15 + Tutorial – 15)									30
Text Book(s):									
1.	A Foundation Course in Human Values and Professional Ethics, R.R. Gaur, R. Asthana and G.P. Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN: 978-93-87034-47-1.								
2.	Teachers' Manual for A Foundation Course in Human Values and Professional Ethics, R.R. Gaur, R. Asthana and G.P. Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN: 978-93-87034-53-2								
Reference(s):									
1.	Engineering Ethics: Includes Human Values, M. Govindarajan, S. Natarajan and V.S. Senthil Kumar, PHI Learning Pvt. Ltd., New Delhi, 2017 Edition. ISBN: 978-81-203-2578-4.								
2.	Universal Human Values Handbook for Students, All India Council for Technical Education (AICTE), New Delhi, 2023 Edition.								
SDG No(s): *3, **15									

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Syllabus										
K.S.Rangasamy College of Technology – Autonomous R2026										
B.E. / B.Tech. (Common to all Branches)										
26MSDGC01 – Mandatory Additional Credit SDG Course – 1										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
I	18	0	0	12	30	1	100	0	100	
Personal Financial Planning and Investment Skills Financial literacy, budgeting, saving, financial goals, banking, digital payments, FD, RD, PPF, SIP, insurance, loans, scholarships and financial fraud awareness; Government schemes including PMJDY, PMJJBY, PMSBY, APY, PMMY, PM SVANidhi and PM Vishwakarma; Personal Financial Plan.										
										[4]
SDG No(s): 1 – No Poverty Zero Food Waste and Sustainable Consumption Skills Food security, nutrition, hunger, food waste reduction, smart purchasing, food storage, reuse, donation and waste management; awareness of NFSA, PMGKAY, POSHAN 2.0, PM POSHAN and PMKSY; Zero Food Waste and Food Security Action Plan.										
										[4]
SDG No(s): 2 – Zero Hunger Good Health and Well-Being Skills Physical and mental health, healthy lifestyle, nutrition, exercise, sleep, hygiene, preventive healthcare, stress management, first aid, safety, digital well-being and disease prevention; awareness of Ayushman Bharat, Ayushman Arogya Mandirs, National Health Mission (NHM), POSHAN 2.0, Fit India Movement and Tele-MANAS; Personal Health and Well-being Action Plan.										
										[3]
SDG No(s): 3 – Good Health and Well-being Quality Education and Lifelong Learning Skills Quality and inclusive education, lifelong learning, goal setting, time management, critical thinking, effective learning, digital and AI-enabled learning, MOOCs, OER, academic integrity and collaborative learning; awareness of NEP 2020, SWAYAM, NPTEL, DIKSHA, ABC, NCeF and Samagra Shiksha; Personal Learning Plan.										
										[3]
SDG No(s): 4 – Quality Education Gender Sensitization and Inclusive Workplace Skills Gender equality, stereotypes, bias, discrimination, diversity, inclusion, human rights, prevention of sexual harassment, inclusive communication, workplace safety and professional conduct; awareness of the POSH Act, 2013 and Government initiatives promoting gender equality; Gender-Inclusive Workplace Action Plan.										
										[3]
SDG No(s): 5 – Gender Equality Water Harvesting and Conservation Skills Water resources, water scarcity, conservation, rainwater harvesting, groundwater recharge, water reuse, efficient water use, leakage prevention, greywater management and community participation; awareness of Jal Jeevan Mission, Atal Bhujal Yojana, AMRUT 2.0 and Catch the Rain; Water Conservation and Rainwater Harvesting Action Plan.										
										[3]
SDG No(s): 6 – Clean Water and Sanitation Renewable Energy Installation and Maintenance Basics Renewable energy; basics of solar, wind, biomass and small hydro energy; solar PV components, basic installation, safety, inspection, maintenance and troubleshooting; energy conservation; awareness of PM-KUSUM, PM Surya Ghar: Muft Bijli Yojana, National Solar Mission and National Green Hydrogen Mission; Basic Renewable Energy Installation and Maintenance Action Plan.										
										[3]
SDG No(s): 7 – Affordable and Clean Energy Industry Readiness and Professional Development Skills Workplace readiness, career planning, resume preparation, communication, interview and presentation skills, teamwork, leadership, problem-solving, professional ethics and digital/AI skills; internship, apprenticeship and employability opportunities; awareness of National Apprenticeship Training Scheme (NATS), National Apprenticeship Promotion Scheme (NAPS), Skill India Digital and PMKVY; and preparation of an Individual Career Development Plan.										
										[3]
SDG No(s): 8 – Decent Work and Economic Growth										

Passed in BoS Meeting held on 04.06.2026
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Digital Aand Cyber Safety Skills Digital citizenship, data and privacy protection, passwords, multi-factor authentication, phishing, scams, social engineering, identity theft, device security, safe digital payments, cyberbullying, digital footprint, cyber ethics and cybercrime reporting; awareness of CERT-In, National Cyber Crime Reporting Portal, Cyber Swachhta Kendra and Digital Personal Data Protection Act, 2023; Personal Digital and Cyber Safety Action Plan.		[4]
SDG No(s): 9 -Industry, Innovation and Infrastructure.		Total Hours: 30
Text Book(s):		
1.	Financial Literacy and Personal Finance, Arindam Gupta & Shubhra Biswas, S. Chand Publishing, 2026	
2.	Personal Finance, Jack R. Kapoor, Les R. Dlabay, Robert J. Hughes & Melissa Hart, McGraw Hill	
3.	Food Science, Norman N. Potter & Joseph H. Hotchkiss, Springer	
4.	Food Science, Nutrition and Safety, Sumati R. Mudambi & M. V. Rajagopal, New Age International	
5.	Mental Health and Well-Being, Various academic/public-health texts, Oxford University Press	
6.	Health Education and Community Pharmacy, S. Chand Publishing	
7.	Critical Thinking: An Introduction, Alec Fisher, Cambridge University Press	
8.	Make It Stick: The Science of Successful Learning, Peter C. Brown, Henry L. Roediger III & Mark A. McDaniel, Harvard University Press	
9.	Gender and Society, Michael S. Kimmel & Amy Aronson, Oxford University Press	
10.	Gender, Work and Organization, Wiley-Blackwell	
11.	Water Supply Engineering, S. K. Garg, Khanna Publishers	
12.	Environmental Engineering: Water Supply, Engineering and Sustainability, Peavy, Rowe & Tchobanoglous, McGraw-Hill	
13.	Solar Photovoltaics: Fundamentals, Technologies and Applications, Chetan Singh Solanki, PHI Learning	
14.	Renewable Energy Engineering and Technology: Principles and Practice, S. P. Sukhatme & J. K. Nayak, McGraw Hill Education	
15.	Soft Skills: Enhancing Employability – Connecting Campus with Corporate, M. S. Rao, I.K. International Publishing House	
16.	Business Communication, Meenakshi Raman & Prakash Singh, Oxford University Press	
17.	Principles of Information Security, Michael E. Whitman & Herbert J. Mattord, Cengage Learning	
18.	Cybersecurity: The Beginner's Guide, Dr. Joseph Steinberg, McGraw Hill	
Web Resources		
1.	https://sdgs.un.org/	

K.S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE -637215
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CURRICULUM - R2026

**B.E Electronics Engineering
(VLSI Design and Technology)
(For the Batch Admitted in 2026 - 27)**

SEMESTER II

S.No.	Course Code	Course Title	Category	Hours / Semester					C	Max. Marks			
				CI		LI	TW/SL	TH		CA	ES	TM	
				L	T	P							
THEORY COURSES													
1.	26MAC06T	Calculus and Complex Variables	BS	45	15	0	60	120	4	40	60	100	
2.	26CSC02T	Data Structures and Algorithms	ESc	45	0	0	45	90	3	40	60	100	
3.	26CHC02T	Engineering Chemistry	BS	45	0	0	45	90	3	40	60	100	
4.	26EV201T	Circuit Theory and Network analysis	PC	45	15	0	60	120	4	40	60	100	
5.	26TAC02T	Tamils and Technology (தமிழரும் தொழில்நுட்பமும்)	HS	15	0	0	15	30	1	100	0	100	
THEORY WITH LABORATORY COURSES													
6.	26ENC02I	English Essentials-II	HS	15	0	30	15	60	2	50	50	100	
LABORATORY COURSES													
7.	26MEC01L	IDEA Lab Maker Space	ESc	0	0	60	0	60	2	60	40	100	
8.	26CHC02L	Engineering Chemistry Laboratory	BS	0	0	30	0	30	1	60	40	100	
9.	26EV201L	Circuit Theory and Network analysis Laboratory	PC	0	0	45	0	45	1.5	60	40	100	
10.	26CSC02L	Data Structures and Algorithms Laboratory	ESc	0	0	45	0	45	1.5	60	40	100	
EMPLOYABILITY ENHANCEMENT COURSES													
11.	26TPC02P	Career Skill Development-II	CG	0	0	30	0	30	1*	100	0	100	
12.	26ENE***	Foreign language Elective	CG	45	0	0	45	90	3 [#]	100	0	100	
MANDATORY COURSES													
13.	26MYC02T	Environmental Science and Sustainability	MY	30	0	0	30	60	2*	100	0	100	
Total				285	30	240	315	870	23	1000			

* Career Skill Development-II - additional credit is offered and not accounted for CGPA

* Environmental Studies and Sustainability - additional credit is offered and not accounted for CGPA

Foreign language - course can be waived with 3 credits

Mandatory Additional Credit SDG Courses

S.No.	Course Code	Mandatory Non-Credit Skilling Course	SDGs addressed	Category	CI		LI	TW / SL	TH	C	Max Marks		
					L	T	P				CA	ES	TM
1.	26MSDGC02	Mandatory Additional Credit SDG Courses – 2	SDG 10 to 17	MAC	16	0	0	14	30	1	100	0	100

Passed in BoS Meeting held on 04/05/2026

Approved in Academic Council Meeting held on 13/06/2026


Chairman - Board of Studies
Department of Electronics Engineering
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K.S.Rangasamy College of Technology
Tiruchengode - 637 215.

Syllabus

K.S.Rangasamy College of Technology – Autonomous R2026

B.E. (Common to ECE ,EEE, EE (VLSI DT) and R&A)

26MAC06T- Calculus and Complex Variables

Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
II	45	15	0	60	120	4	40	60	100	
Integral Calculus*										
Definite and Indefinite Integrals - Substitution Rule - Techniques of Integration: Integration by Parts, Integration of Rational Functions by Partial Fraction, Integration of Irrational Functions - Improper Integrals.										[9]
Partial Differential Equations*										
Formation of Partial Differential Equations by eliminating arbitrary constants and arbitrary functions - Non-Linear Partial Differential Equations of first order - Lagrange's linear equations - homogeneous linear Partial Differential Equations with constant coefficients										[9]
Complex Variables*										
Analytic function - Necessary and Sufficient conditions (excluding proofs) - Harmonic function - Properties of analytic function - Construction of an analytic function - Cauchy's Integral theorem - Cauchy's integral formula.										[9]
Vector Differentiation*										
Gradient of a Scalar field - Unit Normal Vector - Directional Derivative - Angle of intersection of two surfaces - Divergence and Curl - Solenoidal and Irrotational vector fields - Scalar potential.										[9]
Vector Integration*										
Line Integral - Surface Integrals - Volume Integrals - Green's Theorem - Gauss Divergence Theorem -Stokes' Theorem										[9]
Total Hours : (Lecture - 45 + Tutorial - 15)										60
Text Book(s):										
1.	Kreyszig Erwin, "Advanced Engineering Mathematics", John Wiley and Sons (Asia) Limited, 10 th Edition, 2022.									
2.	Grewal B. S., "Higher Engineering Mathematics", Khanna Publishers, Delhi, 44 th Edition, 2017.									
Reference(s):										
1.	Dass H. K., "Higher Engineering Mathematics", S.Chand& Company Ltd, New Delhi, 3 rd (Revised) Edition, 2014.									
2.	Veerarajan T., "Engineering Mathematics", for Semesters I & II, Tata McGraw Hill Publishing Co., New Delhi, 1 st Edition, 2019.									
3.	Kandasamy P. Thilagavathy K. and Gunavathy K., "Engineering Mathematics – I and II", S.Chand & Company Ltd, New Delhi, 2 nd Edition, 2017.									
4.	Glyn James, Phil Dyke, "Modern Engineering Mathematics", Pearson Education, 6 th Edition, 2020									
SDG No(s): *04										



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K.S.Rangasamy College of Technology
Tiruchengode - 637 215, Namakkal-Dt.

Passed in BoS Meeting held on 04.06.2026

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Syllabus									
K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. (Common to ECE, EEE and EE(VLSIDT))									
26CSC02T – Data Structures and Algorithms									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
II / III	45	0	0	45	90	3	40	60	100
Algorithm Analysis and Linear Data Structures Algorithm Analysis – Mathematical Background, Model of Computation, What to Analyze, Running Time Calculations - Abstract data types – The List ADT – The Stack ADT – The Queue ADT.									[12]
Trees Preliminaries – Binary Trees – The Search Tree ADT – Binary Search Trees – AVL Trees – Tree Traversals – B-Trees – B+ Trees.									[9]
Sorting and Searching Preliminaries – Insertion Sort – Shell Sort – Heap Sort – Merge Sort – Quick Sort – External Sorting – Searching: Sequential Search - Binary Search.									[7]
Hashing and Priority Queues (Heaps) Hashing – Hash Function – Separate Chaining – Open Addressing – Rehashing – Extendible Hashing – Priority Queues (Heaps) – Model – Simple Implementations – Binary Heap– Applications of Priority Queues.									[7]
Graphs Definitions – Topological Sort – Shortest-Path Algorithms: Unweighted Shortest Paths, Dijkstra’s Algorithm – Minimum Spanning Tree: Prim’s Algorithm, Kruskal’s Algorithm – Graph Traversals: Breadth-First Search, Depth-First Search, Biconnectivity.									[10]
Total Hours:									45
Text Book(s):									
1.	Weiss M.A., “Data Structures and Algorithm Analysis in C”, 2 nd Edition, Pearson Education Asia, 2008.								
2.	Anany Levitin, “Introduction to the Design and Analysis of Algorithm”, 3rd Edition, Tenth Impression, Pearson Education Asia, 2017								
Reference(s):									
1.	Rajesh K.Sukla,” Data Structure using C & C++”, Wiley India, 2012.								
2.	Tannenbaum A., “Data Structure using C”, Pearson Education, 2003.								
3.	Goodrich and Tamassia, “Data Structures and Algorithms in C++”, 2 nd Edition, John Wiley and Sons, 2011								
4.	Reema Thareja, “Data Structures using C”, 2 nd Edition, Oxford Higher Education, 2014.								
SDG No(s): 4									

Passed in BoS Meeting held on 06.05.2026
Approved in Academic Council Meeting held on 13.06.2026


CHAIRMAN
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Department of Computer Science and Engineering
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Syllabus										
K.S.Rangasamy College of Technology - Autonomous R2026										
B.E. / B.Tech. (Common to CSE, CSE(AI&ML), EEE, ECE, EE(VLSIDT), MCT, R&A, AI&DS and IT)										
26CHC02T - Engineering Chemistry										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
I / II	45	0	0	45	90	3	40	60	100	
Water Technology *, **, **** Sources and Characteristics of Water - Water Quality Parameters - Hardness of Water: Types, Causes, Effects and Estimation - Problems Caused by Hard water in Industrial systems - Purification Techniques: Zeolite process, Ion-exchange process, Reverse Osmosis (RO) and Electro dialysis.										
										[9]
Electro Chemistry **** Electrode Potential - Nernst Equation - Reversible and Irreversible Cells - Electrochemical Series - Types of Electrodes: Standard Hydrogen, Saturated Calomel and Silver/Silver Chloride. Applications of electrodes: pH Measurement - Conductometric and Potentiometric Titrations.										
										[9]
Corrosion and Control methods ****, ***** Types of Corrosion: Galvanic Corrosion, Differential Aeration Corrosion - Mechanism of Dry Corrosion and Electrochemical Corrosion - Cathodic Protection, Electroplating and Electroless Plating - Modern Corrosion Prevention Techniques: Smart Coatings, Self-Healing Coatings, and Nano Coatings.										
										[9]
Energy Storage Devices ***, ****, ***** Cells and Batteries - Working principle and applications: Lead-Acid, Lithium-Ion and Sodium-Ion Batteries. Fuel Cells: Hydrogen Oxygen and Microbial - Organic Solar Cell: Working Principle and Applications. Supercapacitors - Electrostatic Double Layer, Pseudo capacitors and Hybrid Supercapacitors.										
										[9]
Polymer materials ***, ****, ***** Classification of polymers -Types of polymerizations: Addition, condensation and copolymerization. Compounding of polymer -. Fabrication of polymer: Injection moulding, Extrusion moulding, Blow moulding and Compression moulding. Biomaterials: Types of Biomaterials - Properties and Biodegradation - Sustainable Composites - Engineering Applications										
										[9]
Total Hours:									45	
Text Book(s):										
1.	Dara S.S, "A Text Book of Engineering Chemistry", S. Chand & co. Ltd., 12 th Edition, 2024.									
2.	Palanisamy P. N, Manikandan P, Geetha A, Manjula Rani K and Kowshalya V.N, "Chemistry for Engineering", 2 nd Edition, Pearson India Education Services Pvt. Ltd, 2025.									
Reference(s):										
1.	Jain and Jain, "Engineering Chemistry" Dhanpat Rai Publishing Company, 17 th Edition, 2022.									
2.	Sharma B. K., "Engineering Chemistry", Krishna Prakashan Media Pvt. Ltd., 5 th Edition, 2022.									
3.	Palanna O.G, "Engineering Chemistry", Tata McGraw-Hill Pub.Co.Ltd, New Delhi, 2 nd Edition, 2017.									
4.	Shikha Agarwal, "Engineering Chemistry-Fundamentals and Applications", Cambridge University Press, Delhi, 2 nd Edition, 2019.									
SDG No(s): *3, **6, ***7, ****9, *****12, *****13										



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Syllabus

K.S.Rangasamy College of Technology - Autonomous R2026										
B.E - Electronics Engineering (VLSI Design and Technology)										
26EV201T- Circuit Theory and Network analysis										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
II	45	15	0	60	120	4	40	60	100	
Circuit Analysis Independent and Dependent Sources, Nodal Analysis, Mesh Analysis, Super-node, Super-mesh techniques, Series-Parallel Combinations, Voltage and Current Division Rule, Source Transformations and Star-Delta Transformations.									[9]	
Network Theorems Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power Transfer Theorem, Reciprocity Theorem and Millman's Theorem.									[9]	
Time-Domain and Frequency-Domain Analysis of RLC Circuits* Time Domain: Initial Conditions, RL, RC, RLC Circuit. Frequency Domain: Laplace Transforms, Properties, Inverse-Laplace Transforms, Frequency Domain Representation, RL, RC, RLC Circuits, Response of RL and RC Circuits to Various Functions.									[9]	
Two-Port Networks Z-Parameters, Y-Parameters, ABCD Parameters, h-Parameters, Relationship between Parameters, Interconnection of Two-Port Networks, T-Network, Pi-Network, Lattice Networks.									[9]	
Resonance and Magnetic Circuits Series and Parallel Resonance, Self-Inductance, Mutual-Inductance, Coefficient of Coupling, Dot Convention, Coupled Circuits.									[9]	
Total Hours (Lecture - 45; Tutorial - 15)									60	
Text Book(s):										
1.	Charles K. Alexander and Matthew N.O. Sadiku, "Fundamentals of Electric Circuits", McGraw Hill, 7th Edition, 2021.									
2.	William H. Hayt, Jack E. Kemmerly, and Jamie Phillips, "Engineering Circuit Analysis", McGraw Hill, 9th Edition, 2019.									
Reference(s):										
1.	M.E. Van Valkenburg, "Network Analysis", Pearson Education, 3rd Edition, 2019.									
2.	A. Chakrabarti, "Circuit Theory: Analysis and Synthesis", Dhanpat Rai & Co., 2020.									
3.	Mahmood Nahvi and Joseph Edminister, "Schaum's Outline of Electric Circuits", McGraw Hill, 7th Edition, 2018.									
4.	James W. Nilsson and Susan Riedel, "Electric Circuits", Pearson, 11th Edition, 2018.									
SDG No(s): 9										

Passed in BoS Meeting held on 04/05/2026
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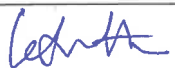
Syllabus										
K.S.Rangasamy College of Technology – Autonomous R2026										
B.E. / B.Tech. (Common to All Branches)										
26TAC02T - Tamils and Technology										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW / SL	TH		C	CA	ES	Total
	L	T	P							
II	15	0	0	15	30	1	100	0	100	
Weaving and Pottery (Ceramic) Technology* Weaving Industry during Sangam Age Ceramic technology - Black and Red-ware Potteries (BRW) - Graffiti on Potteries.										[3]
Design and Construction Technology** Designing and Structural construction - House & Designs in household materials during Sangam Age Building materials and Hero stones of Sangam age - Details of Stage Constructions in Silappathikaram Sculptures and Temples of Mamallapuram - Great Temples of Cholas and other worship places - Temples of Nayaka Period - Type study (Madurai Meenakshi Temple)- Thirumalai Nayakar Mahal - Chetti Nadu Houses, Indo Saracenic architecture at Madras during British Period.										[3]
Manufacturing Technology*** Art of Ship Building - Metallurgical studies Iron industry - Iron smelting, steel - Copper and gold-Coins as source of history - Pinting of Coins - Beads making-industries - Stone beads - Glass beads - Terracotta beads - Shell beads/bone beads - Archaeological evidences - Gem stone types described in Silappathikaram.										[3]
Agriculture and Irrigation Technology** Dam, Tank, Ponds, Sluice, Significance of KumizhiThoompu of Chola Period, Animal Husbandry - Wells designed for cattle use - Agriculture and Agro Processing - Knowledge of Sea - Fisheries - Pearl - Conch diving -Ancient Knowledge of Ocean - Knowledge Specific Society.										[3]
Scientific Tamil & Tamil Computing** Development of Scientific Tamil - Tamil computing - Digitalization of Tamil Books - Development of Tamil Software - Tamil Virtual Academy Tamil Digital Library - Online Tamil Dictionaries - Sorkuvai Project										[3]
Total Hours:									15	
Text Book(s):										
1.	தமிழக வரலாறு- மக்களும் பண்பாடும் கே. கே. பிள்ளை (வெளியீடு தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).									
2.	கீழடி - வைகை நதிக்கரையில் சங்ககால நகர நாகரீகம் (தொல்லியல் துறை வெளியீடு).									
Reference(s):										
1.	பொருதை ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).									
2.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL- (in print).									
3.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies.									
4.	Department of Archaeology & Tamil Nadu Text Book and Educational Services Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published									
SDG No(s): *4.**9.***11										

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K.S.Rangasamy College of Technology – Autonomous R2026										
B.E. / B.Tech. (அனைத்து துறைகளுக்கும் பொதுவானது)										
26TAC02T- தமிழரும் தொழில்நுட்பமும்										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW / SL	TH		C	CA	ES	Total
	L	T	P							
II	15	0	0	15	30	1	100	0	100	
நெசவு மற்றும் பாணைத் தொழில்நுட்பம்* சங்க காலத்தில் நெசவுத் தொழில் -பாணைத் தொழில்நுட்பம் கருப்பு சிவப்பு பாண்டங்கள் - பாண்டங்களில் கீறல் குறியீடுகள்.										[3]
வடிவமைப்பு மற்றும் கட்டிடத் தொழில்நுட்பம்* சங்க காலத்தில் வடிவமைப்பு மற்றும் கட்டுமானங்கள் &சங்க காலத்தில் வீட்டுப் பொருட்களில் வடிவமைப்பு சங்க காலத்தில் கட்டுமான பொருட்களும் நடுகல்லும் - சிலப்பதிகாரத்தில் மேடை அமைப்பு பற்றிய விவரங்கள் - மாமல்லபுரம் சிற்பங்களும், கோவில்களும் - சோழர் காலத்துப் பெருங்கோயில்கள் மற்றும் பிற வழிபாட்டுத் தலங்கள் - நாயக்கர் காலக் கோயில்கள் - மாதிரி கட்டமைப்புகள் பற்றி அறிதல், மதுரை மீனாட்சி அம்மன் ஆலயம் மற்றும் திருமலை நாயக்கர் மஹால் - செட்டிநாட்டு வீடுகள் - பிரிட்டிஷ் காலத்தில் சென்னையில் இந்தோ-சாரோசெனிக் கட்டிடக் கலை.										[3]
உற்பத்தித் தொழில்நுட்பம்*** கப்பல் கட்டும் கலை - உலோகவியல் - இரும்புத் தொழிற்சாலை இரும்பை உருக்குதல், எஃகு - வரலாற்றுச் சான்றுகளாக செம்பு மற்றும் தங்க நாணயங்கள் நாணயங்கள் அச்சடித்தல் - மணி உருவாக்கும் தொழிற்சாலைகள் - கல்மணிகள், கண்ணாடி மணிகள் - சுடுமண் மணிகள் சங்கு மணிகள் - எலும்புத்துண்டுகள் - தொல்லியல் சான்றுகள் சிலப்பதிகாரத்தில் மணிகளின் வகைகள்.										[3]
வேளாண்மை மற்றும் நீர்ப்பாசனத் தொழில்நுட்பம்** அணை, ஏரி, குளங்கள், மதகு - சோழர்காலக் குழுவித் தூம்பின் முக்கியத்துவம் -கால்நடை பராமரிப்பு - கால்நடைகளுக்காக வடிவமைக்கப்பட்ட கிணறுகள் வேளாண்மை மற்றும் வேளாண்மைச் சார்ந்த செயல்பாடுகள் - கடல்சார் அறிவு மீன்வளம் - முத்து மற்றும் முத்துக்குளித்தல் - பெருங்கடல் குறித்த பண்டைய அறிவு - அறிவுசார் சமூகம்.										[3]
அறிவியல் தமிழ் மற்றும் கணித்தமிழ்** அறிவியல் தமிழின் வளர்ச்சி - கணித்தமிழ் வளர்ச்சி - தமிழ் நூல்களை மின்பதிப்பு செய்தல் - தமிழ் மென்பொருட்கள் உருவாக்கம் - தமிழ் இணையக் கல்விக்கழகம் - தமிழ் மின் நூலகம் - இணையத்தில் தமிழ் அகராதிகள்- சொற்குவைத் திட்டம்.										[3]
Total Hours:									15	
Text Book(s):										
1.	தமிழக வரலாறு - மக்களும் பண்பாடும் கே. கே. பிள்ளை (வெளியீடு தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).									
2.	கீழடி- வைகை நதிக்கரையில் சங்ககால நகரநாகரீகம் (தொல்லியல் துறை வெளியீடு).									
Reference(s):										
1.	பொருளை ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).									
2.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL- (in print).									
3.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies.									
4.	Department of Archaeology & Tamil Nadu Text Book and Educational Services Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published									
SDG No(s): *4 **9 ***11										

Passed in BoS Meeting held on 04.06.2026
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Syllabus

K.S.Rangasamy College of Technology – Autonomous R2026										
B.E. / B.Tech. (Common to All Branches)										
26ENC02I – English Essentials–II										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW	SL		TH	C	CA	ES
	L	T	P							
II	15	0	30	15	60	2	50	50	100	
Cause and Effect Connectives* Listening – Radio / TV / Podcast Interview (survivors’ tale) and framing a set of instructions/Do’s and Don’ts Speaking - Asking questions and answering, Conducting an interview (of an achiever/survivor) Reading – Excerpts of Literature (short stories), Journal articles on issues like Global warming Writing –Instructions; Official letter /email (Request for internship / Industrial visit) Grammar – If clauses/conditional clauses, Imperatives Vocabulary – Cause and effect expressions, Idioms										[9]
Compare and Contrast* Listening –Product reviews and gap fill exercises, Short Talks (like TED Talks) for specific information Speaking - Speaking persuasively about specifications of a product (e.g., home appliances) Reading – Graphical content (table/chart/graph) and making inferences Writing – Compare and Contrast Essay Grammar – Degrees of Comparison; Tenses Vocabulary – Order of Adjectives, Transition words										[9]
Problem and Solution* Listening – Group discussion (case study) Speaking - Describing visual content (Pictures/Table/Chart) Reading – Visual content (Pictures on social issues / natural disasters) for comprehension; Editorial Writing – Picture description; Problem and Solution Essay Grammar – Modal verbs; Relative pronoun Vocabulary – Negative prefixes, Signal words for problem and solution.										[9]
Reporting* Listening – Listening to news reading Speaking - Analytical discussion on various aspects of a given problem. Reading – Newspaper report on survey findings Writing – Survey report, Making recommendations Grammar – Active and passive voice, Direct and Indirect speech Vocabulary –Reporting verbs, Numerical adjectives										[9]
Presentation* Listening – Listening for Gist and Specific Information Speaking - Making presentation with visual component (PPT slides) (job interview/project / innovative product presentation) Reading – Skimming and Scanning Techniques and Developing Critical Reading Skills Writing –Common Errors in Student Writing and AI Tools for Writing Enhancement Grammar –Prepositional phrases Vocabulary – Fixed expressions, Collocations.										[9]
Total Hours (Lecture -15 Hrs, Practice-30 Hrs and Self Learning – 15 Hrs)									60	
Text Book(s):										
1.	“English for Engineers and Technologists” Volume I & II by Orient Blackswan, 2022									
2.	Louis Trimble, “English for Science &Technology-I” by Cambridge University Press, 1985									
Reference(s):										
1.	Bhatnagar Nitin, “Communicative English for Engineers and Professionals”, Pearson India, 2010.									
2.	David Morgan, “Take-Off–Technical English for Engineering”, Garnet Education,2008.									
3.	Mathew Richardson, “Advanced Communication Skills”, Charlie Creative Lab, 2020.									
SDG No(s): *4										

Passed in BoS Meeting held on 04.06.2026
 Approved in Academic Council Meeting held on 13.06.2026


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K.S.Rangasamy College of Technology
Tiruchengode - 637 215. Namakkal-Dt.

Syllabus

K.S.Rangasamy College of Technology – Autonomous R2026									
(Common to All branches)									
26MEC01L – IDEA Lab Maker Space									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
I / II	0	0	60	0	60	2	60	40	100

(A). Product Assembly and Fabrication Practices (3)

- i. Power Tools and its handling techniques
- ii. Dis-assembly and assembly of Computers
- iii. Dis-assembly and assembly of home appliances – Mixer Grinder / Ceiling Fan / Table Fan / Washing Machine / Air-Conditioners / Refrigerators / Bicycle
- iv. Planning and assembly of household plumbing lines – Water Taps, Faucets, Shower Units, Flush Tanks, Wash Basins & Pipe Fittings
- v. Fabrication of simple sheet metal models

(B). Welding Practices (1)

- i. Welding types, selection & safety measures.
- ii. Hands-on session on base material preparation, joint groove preparation, and MAW, GMAW, GTAW welding process on carbon steel & stainless-steel plates and pipes.

(C). Contemporary Systems (4)

- i. Understanding CNC Machines, digital fabrication equipment and safety practices
- ii. Demonstration of Solid Modelling & assembly of components
- iii. Fabrication of simple components / parts using 3D Printers
- iv. Demonstration of customized pattern cutting and engraving on Acrylic Sheets
- v. Demonstration of customized pattern cutting and engraving on Wood

(D). Electrical Wiring Practices (1)

- i. Electrical Installation tools, equipment & safety measures
- ii. Hands-on session of household electrical wiring – Fuses, Miniature Circuit Breakers, Distribution Box, Lightings, Fans, Calling Bells, Motors & Uninterrupted Power Supply

(E). Electronics Components / Equipment Practices (3)

- i. Electronic components, equipment & safety measures
- ii. Hands-on session of PCB layout design of Bridge Rectifier / Operational Amplifier
- iii. Hands-on session of Soldering and testing of Bridge Rectifier / Operational Amplifier
- iv. Hands-on session of Integration of Sensors and actuators with a microcontroller
- v. Demonstration of Programmable Logic Control (PLC) circuit.

Reference(s):

1.	Hoffman, D.J., Dahle, K.R., and Fisher, D.J., Welding, 3rd Edition, Pearson Education, 2023.
2.	Shiva, S. and Shukla, A.K., Additive Manufacturing Technologies, Wiley India, 2024
3.	Code of Practice for Electrical Wiring Installations (IS 732:2019)

SDG No(s): *9. **4.


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K.S.Rangasamy College of Technology - Autonomous R2026									
B.E. / B.Tech. (Common to CSE, CSE(AI&ML), EEE, ECE, EE(VLSIDT), MCT, R&A, AI&DS and IT)									
26CHC02L - Engineering Chemistry Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
I / II	0	0	30	0	30	1	60	40	100
List of Experiments:									
1. Analysis of total hardness of given water sample before and after purification by EDTA method.*									
2. Determination different types of alkalinity present in given water sample.*									
3. Determination of pH of a given solution using a pH meter.*									
4. Estimation of amount of acid in the given solution by conductivity meter.*									
5. Determination of percentage corrosion by weight loss method. **									
6. Comparative study of corrosion resistance of coated and uncoated mild steel. **									
7. Determination of iron strength by measuring cell potential. **									
8. Fabrication of a bio-electrochemical cell and determination of its cell potential. **									
9. Fabrication of polymer sheet by solvent casting. **									
10. Determination of molecular weight of a polymer using an Ostwald viscometer. **									
Lab Manual									
1. "Chemistry Laboratory manual" Volume 1 & 2, Department of Chemistry, KSRCT.									
SDG No(s): *6. **9									

Course Designer(s)

1. Dr.T.A.Sukantha - sukantha@ksrct.ac.in
2. Dr.R.Palanivelu - palanivelu@ksrct.ac.in
3. Dr.B.Srividhya - srividhya@ksrct.ac.in
4. Dr.S.Meenachi - meenachi@ksrct.ac.in
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6. Dr.K.Tamilarasu - tamilarasu@ksrct.ac.in
7. D.Kirthiga - kirthiga@ksrct.ac.in


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K.S.Rangasamy College of Technology - Autonomous R2026									
B.E - Electronics Engineering (VLSI Design and Technology)									
26EV201L - Circuit Theory and Network Analysis Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/ SL	TH		C	CA	ES
	L	T	P						
II	0	0	45	0	45	1.5	60	40	100
List of Experiments:									
1. Measurements of Current and Power of a Specific Branch in a Circuit 2. Measurements of Voltage and Power of a Specific Node in a Circuit 3. Measurement of voltage using mesh analysis 4. Measurement of current using nodal analysis 5. Calculation of various power in an AC circuit 6. Verification of Thevenien Theorem 7. Verification of Notrons Theorem 8. Verification of Superposition Theorem 9. Verification of Reciprocity Theorem 10. Check the Transient Response of RL Circuits 11. Check the Transient Response of RC Circuits 12. Check the Transient Response of RLC Circuits									
Activity:									
• Develop a mini project based on circuit theory and network analysis concepts to design, simulate, and experimentally verify a practical electrical network for a real-world application.									
Lab Manual									
1.	"Circuit Theory and Network Analysis Laboratory Manual", Department of Electronics Engineering (VLSI Design and Technology), KSRCT.								
SDG No(s): 9									

Course Designer(s)

1. Dr.S.Pradeep - pradeeps@ksrct.ac.in

K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. (Common to ECE, EEE and EE(VLSIDT))									
26CSC02L - Data Structures and Algorithms Laboratory									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
II / III	0	0	45	0	45	1.5	60	40	100

List of Experiments:

- 1 Perform various operations on the List Abstract Data Type (ADT), including insertion, deletion, searching, and traversal of linear data collections.
- 2 Execute fundamental operations on the Stack ADT, including push, pop, peek, and traversal.
- 3 Execute fundamental operations on the Queue ADT, including enqueue, dequeue, and traversal.
- 4 Apply stack-based techniques for balanced parenthesis checking and postfix expression evaluation.
- 5 Perform insertion, deletion, searching, and traversal operations on the Search Tree ADT.
- 6 Analyze and evaluate the behavior of various sorting algorithms for efficient data organization.
- 7 Apply linear and binary search techniques for efficient retrieval of data elements.
- 8 Utilize hashing techniques for efficient storage, retrieval, and collision resolution of data.
- 9 Apply shortest path algorithms for determining optimal paths in weighted graphs.
- 10 Construct and analyze minimum spanning trees for cost-effective graph connectivity.

Tools / software used: Code::Blocks IDE / Dev-C++ / Visual Studio Code

SDG No(s): 4

Course Designer(s)

Dr. K.Poongodi - poongodik@ksrct.ac.in



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Department of Computer Science and Engineering
K. S. Rangasamy College of Technology
Tiruchengode - 637 215, Namakkal-Dt

Passed in BoS Meeting held on 06.05.2026
Approved in Academic Council Meeting held on 13.06.2026

Syllabus									
K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. / B.Tech. (Common to All Branches)									
26TPC02P - Career Skill Development-II									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW / SL	TH		C	CA	ES
	L	T	P						
II	0	0	30	0	30	1	100	0	100
Critical Reasoning**,** Deductive Reasoning - Syllogism - Statements and Conclusions, Cause and Effect, Statements and Assumptions - Identifying Strong Arguments and Weak Arguments – Cause and Action - Data sufficiency									[6]
Quantitative Aptitude - Part – 4**,** Permutation and Combination - Probability - Quadratic equation - Geometry Elementary statistics – Clock – Calendar – Logarithmic									[6]
Non-Verbal Reasoning**,** Translation, rotation, scaling, mirroring, assembling, and grouping, paper folding and cutting, and patterns in 2 and 3 dimensions. Series Completion of Figures – Mirror images and Water Images									[6]
Quantitative Aptitude - Part – 5**,** Mensuration of Area, Volume and Surface area in 2D and 3D Shapes – 2D Shapes – Square, Rectangle, Triangle, Circle, etc. - 3D Shapes – Cube, Cuboid, Sphere, Cone, etc.									[6]
Data Interpretation and Analysis**,** Data Interpretation Based on Tabulation, Pie chart, Bar graph, And Line graph – 2 and 3 dimensional plots, maps, and tables - Data sufficiency									[6]
Total Hours:								30	
Text Book(s):									
1.	Aggarwal, R.S. "Quantitative Aptitude for Competitive Examinations (Latest Edition 2024-2025)" S.Chand & Co Ltd., New Delhi.								
2.	Aggarwal, R.S. 'A Modern Approach to Verbal and Non-verbal Reasoning', Revised Edition 2026, S.Chand & Co Ltd., New Delhi.								
Reference(s):									
1.	Dinesh Khattar, 'Quantitative Aptitude For Competitive Examinations', Pearson Education 2020								
2.	Anne Thomson, 'Critical Reasoning: A Practical Introduction' Lexicon Books, 3 rd edition, 2022. Warsaw								
SDG No(s): *4, **8									


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Syllabus									
K.S.Rangasamy College of Technology – Autonomous R2026									
B.E. / B.Tech. (Common to All Branches)									
26MYC02T - Environmental Science and Sustainability									
Semester	Hours/Semester					Credit	Maximum Marks		
	CI		LI	TW/SL	TH		C	CA	ES
	L	T	P						
II	30	0	0	30	60	2	100	0	100
Introduction to Sustainable Development * Definition and Principles of Sustainable Development. Pillars: Economic, Social, Environmental Sustainability, Agenda 2030: 17 Sustainable Development Goals (SDGs). Interconnectedness of SDGs: Examples from Tamil Nadu (Ex: Smart Cities Mission, Water Resource Projects) SDG Indicators and Targets. Challenges in Achieving SDGs: National and Regional (Example: urbanization in TN, climate vulnerability). Role of Stakeholders: Government, Industry, Academia, Citizens.									[6]
Air Pollution and Mitigation Strategies ** Sources and Impacts: Urban & Industrial Air Pollution. Greenhouse Effect, Global Warming, Climate Change. Ozone Layer Depletion and Acid Rain. Mitigation Strategies: Carbon Capture and Utilization (CCU) in industries, Renewable Hydrogen and Biochar, Green Infrastructure: Urban afforestation, green walls, AI & IoT-based air quality monitoring.									[6]
Sustainable Waste and Water Management *** Classification of Solid and Liquid Wastes- Waste Management: 5R Approach - Waste Management Process: Collection, Segregation, Treatment, and Disposal - Municipal Waste (MSWM) - E-waste. Water Pollution and Wastewater Treatment: Nanotechnology, Bioremediation, Coagulation, Photocatalysis, Floating Wetlands (Case study: Chennai Eco-restoration Projects), IoT-Enabled Pollution Monitoring, Industrial Discharge Regulation									[6]
Sustainable Practices in Agriculture and Energy **** Renewable Energy: Solar (Example: TN Solar Mission), Wind, Hydro, Bioenergy. Sustainable and Climate-Resilient Agriculture - Green Auditing and Farm Practices, Smart Irrigation Systems: Soil Moisture Sensors, Evapotranspiration Systems, Drip Irrigation with Automation, AI/IoT in Precision Farming, Water Conservation: Rainwater Harvesting, Watershed Protection (Case: TN Water Resource Conservation Programs).									[6]
Technology in Natural Resource Management ***** Role of Data and Digital Tools in Sustainability, IS, GPS, Remote Sensing: Applications in Land Use, Forests, Water Resources, Digital Image Processing in Forecasting Disasters, Environmental Information Systems: ENVIS, EIA Tools, MoEFCC Portals, Use of Web Technologies and Mobile Apps for Citizen Participation (e.g., TN Smart Cities dashboard)									[6]
Total Hours:									30
Text Book(s):									
1.	Anubha Kaushik and Kaushik C.P., "Perspectives in Environmental Studies", New Age International publishers, 6 th Edition, 2018.								
2.	De, A. K., "Environmental Chemistry", 8 th Edition, New Age International Publishers, New Delhi, 2017.								
Reference(s):									
1.	Tyler Miller G, "Environmental Science", 14 th Edition Cengage Publications, Delhi, 2013.								
2.	Gilbert M Masters and Wendell P Ela, "Environmental Engineering and Science", PHI Learning Pvt.Ltd, 3 rd Edition, 2015.								
3.	Erach Bharucha, "Textbook of Environmental Studies for Undergraduate Courses", Universities Press, 4 th Edition, 2025.								
4.	Elliott, J. A., "An Introduction to Sustainable Development", 5 th Edition, Routledge, London, 2023.								
SDG No(s): *17, **13, ***6, ****7, *****9									



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Tiruchengode - 637 215. Namakkal-Dt.

Passed in BoS Meeting held on 04.06.2026

Approved in Academic Council Meeting held on 13.06.2026

Syllabus										
K.S.Rangasamy College of Technology – Autonomous R2026										
B.E. / B.Tech. (Common to all Branches)										
26MSDGC02 - Mandatory Additional Credit SDG Course – 2										
Semester	Hours/Semester					Credit	Maximum Marks			
	CI		LI	TW/SL	TH		C	CA	ES	Total
	L	T	P							
II	16	0	0	14	30	1	100	0	100	
Equity, Inclusion and Social Responsibility Skills Equity, equality, diversity and inclusion; human rights, bias and discrimination; accessibility, social responsibility, volunteering and responsible citizenship; awareness of Rights of Persons with Disabilities Act, 2016, Accessible India Campaign, National Education Policy (NEP) 2020, PM-JANMAN and Aspirational Districts Programme; Equity, Inclusion and Social Responsibility Action Plan.										
										[4]
SDG No(s): 10 - Reduced Inequalities Disaster Preparedness and Community Resilience Skills Disaster types, risks, preparedness, emergency response, evacuation, first aid and safety; early warning and community resilience; awareness of National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), National Disaster Response Force (NDRF), Sendai Framework and Government disaster-management initiatives; Disaster Preparedness and Community Resilience Action Plan.										
										[4]
SDG No(s): 11 - Sustainable Cities and Communities Waste Management and Recycling Skills Types of waste; Reduce, Reuse, Repair, Recover and Recycle (5R); waste segregation, recycling, composting, e-waste and plastic-waste management; responsible consumption and waste reduction; awareness of Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016, E-Waste (Management) Rules, 2022, Swachh Bharat Mission 2.0 and Mission LIFE; Waste Management and Recycling Action Plan.										
										[4]
SDG No(s): 12 - Responsible Consumption and Production. Sustainable Living and Green Technology Skills Sustainable living, climate change, carbon footprint, energy and water conservation, renewable energy, green technology and responsible consumption; awareness of Mission LIFE, National Green Hydrogen Mission, PM Surya Ghar: Muft Bijli Yojana, PM-KUSUM and Swachh Bharat Mission 2.0; Sustainable Living and Climate Action Plan.										
										[4]
SDG No(s): 13 - Climate Action Blue Economy and Sustainable Water Resources Skills Blue economy; sustainable use of oceans, seas, rivers, lakes and coastal resources; aquatic ecosystems, water pollution, marine litter, fisheries, water conservation and wastewater reuse; awareness of Blue Economy 2.0, Sagarmala Programme, National Mission for Clean Ganga (Namami Gange), AMRUT 2.0 and Pradhan Mantri Matsya Sampada Yojana (PMMSY); Blue Economy and Sustainable Water Resources Action Plan.										
										[4]
SDG No(s): 14 - Life Below Water Nature Conservation Aand Ecosystem Management Skills Biodiversity, ecosystems, forests, wetlands, wildlife, soil and land conservation; biodiversity threats, green spaces and community participation; awareness of National Mission for a Green India, Project Tiger, Project Elephant, Nagar Van Yojana, CAMPA and Mission LIFE; Nature Conservation and Ecosystem Management Action Plan.										
										[4]
SDG No(s): 15 - Life on Land Legal Awareness and Civic Responsibility Skills Constitution of India, fundamental rights and duties, equality, justice, democratic values and citizen responsibilities; consumer rights, cyber laws, digital rights, data privacy, road safety and workplace rights; legal remedies and Legal Services Authorities and free legal aid; awareness of National Legal Services Authority (NALSA), Consumer Protection Act, 2019, Motor Vehicles Act, 1988, Digital Personal Data Protection Act, 2023 and Right to Information Act, 2005; Personal Legal Awareness and Civic Responsibility Action Plan.										
										[3]
SDG No(s): 16 - Peace, Justice and Strong Institutions										

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Leadership and Teamwork Skills		[3]
Leadership, self-awareness, emotional intelligence, goal setting, decision-making, problem-solving, communication, teamwork and collaboration; conflict management, accountability, inclusive leadership, ethics and workplace behaviour; awareness of Skill India, National Apprenticeship Promotion Scheme (NAPS) and National Apprenticeship Training Scheme (NATS); team-building, leadership and group problem-solving activities.		
SDG No(s): 17 - Partnerships for the Goals.		
		Total Hours:
		30
Text Book(s):		
1	The Social Justice Reader, Michael Reisch, Routledge	
2	Disability Studies: An Interdisciplinary Introduction, Dan Goodley, SAGE Publications	
3	Introduction to International Disaster Management, Damon P. Coppola, Butterworth-Heinemann / Elsevier	
4	Natural Hazards and Disaster Management, R. B. Singh, Rawat Publications	
5	M. N. Rao and Razia Sultana, <i>Solid Waste Management: Principles and Practice</i> , B.S. Publications	
6	N. B. Singh, Waste Management and Resource Recovery, New India Publishing Agency.	
7	Sustainable Development: Principles, Frameworks and Practice, Margaret Robertson, Routledge	
8	Climate Change: A Very Short Introduction, Mark Maslin, Oxford University Press	
9	The Blue Economy: A New Perspective for Sustainable Development, Gunter Pauli, Various editions	
10	Water Resources: An Introduction, R. K. Linsley, M. A. Kohler & J. L. H. Paulhus, McGraw-Hill	
11	Biodiversity Conservation and Environmental Management, Rajagopalan R, Oxford University Press	
12	Ecology: Concepts and Applications, Manuel C. Molles Jr., McGraw-Hill Education	
13	The Constitution of India, P. M. Bakshi, Universal Law Publishing	
14	Legal Awareness and Legal Literacy, S. R. Myneni, Asia Law House	
15	The Leadership Challenge, James M. Kouzes & Barry Z. Posner, Wiley	
16	Developing the Leader Within You 2.0, John C. Maxwell, HarperCollins Leadership	
Web Resources		
1	https://sdgs.un.org/	

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