

K.S. Rangasamy College of Technology

(Autonomous)



CURRICULUM & SYLLABI

of

B.E. Mechanical Engineering **(For the Batch Admitted in 2026– 2027)**

R 2026

**Programme Accredited by NBA, NAAC with 'A++' Grade,
Approved by AICTE, Affiliated to Anna University, Chennai**

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

K.S. RANGASAMY COLLEGE OF TECHNOLOGY

Credit Distribution for B.E. (MECH) Program: 2026 - 2027 Batch

S.No.	Category	Credits per Semester								Total Credits	%
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	3	3	-	1	-	-	-	-	07	04.22
2.	BS	12	4	4	-	-	-	-	-	20	12.05
3.	ES	4	12	4.5	-	-	-	-	-	20.5	12.35
4.	PC	1	1	15.5	21	14	18	16	-	86.5	52.11
5.	PE	-	-	-	-	6	6	6	-	18	10.84
6.	OE	-	-	-	3	3	-	-	-	06	03.61
7.	GE	1*	1*	-	-	-	-	-	-	2*	-
8.	CG	CSD I	CSD II	CSD III	CSD IV	CSD V	CSD VI	-	8	8+1*	04.82
9.	MC	MC I	MC II	MC III	MC IV	MC V	-	-	-	-	-
10.	AC	-	-	-	-	-	-	AC	-	-	-
Total		20	20	24	25	23	24	22	8	166	100

HS – HUMANITIES AND SOCIAL SCIENCES

BS – BASIC SCIENCE

ES – ENGINEERING SCIENCES

PC – PROFESSIONAL CORE

PE – PROFESSIONAL ELECTIVES

OE – OPEN ELECTIVES

GE – GENERAL ELECTIVES

CG - CAREER GUIDANCE COURSES

MC – MANDATORY COURSES

AC- AUDIT COURSES

Open Electives are courses offered by different departments that do not have any prerequisites and could be of interest to students of any branch.

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

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

COURSES OF STUDY
(For the Batch Admitted in 2026 - 2027)

SEMESTER I

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1.		Induction Programme	-	-	-	-	-	0
THEORY								
2.	26 EN1C1I	English Essentials - I	HS	4	2	0	2	3
3.	26MA1C3T	Differential Calculus	BS	5	3	1	0	4
4.	26PH1C1T	Engineering Physics	BS	3	3	0	0	3
5.	26CH1C1T	Applied Chemistry	BS	3	3	0	0	3
6.	26ME1C1T	Engineering Drawing	ES	5	1	2	0	3
7.	26EN1E*T	Foreign Language (Japanese/German)	HS	1	1	0	0	1*
8.	26TA1YIT	Heritage of Tamil (தமிழர்மரபு)	GE	1	1	0	0	1*
9.	26MY2Y1T	Universal Human Values*	MC	3	3	0	0	3*
PRACTICALS								
10.	26PH1C1L	Engineering Physics Laboratory	BS	2	0	0	2	1
11.	26CH1C1L	Chemistry Laboratory	BS	2	0	0	2	1
12.	26ME1C2L	Computer Aided Drafting Laboratory	ES	2	0	0	2	1
13.	26ME101L	Design Thinking Laboratory	PC	2	0	0	2	1
14.	26TP1G1P	Career Skill Development – I	CG	2	0	0	2	1*
Total				31	16	3	12	20

SEMESTER II

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	26EN2C2I	English Essentials - II	HS	4	2	0	2	3
2.	26MA2C3T	Integral Calculus	BS	5	3	1	0	4
3.	26IT2C1T	Problem Solving using Python	ES	3	3	0	0	3
4.	26EE2C3T	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	26ME2C3T	Engineering Mechanics	ES	5	3	1	0	4
6.	26MY1Y1T	Environmental Studies and Sustainability	MC	2	2	0	0	2*
7.	26TA2Y1T	Tamils and Technology (தமிழரும் தொழில்நுட்பமும்)	GE	1	1	0	0	1*
PRACTICALS								
8.	26EE2C1L	Makerspace	ES	2	0	0	2	1
9.	26IT2C1L	Problem Solving using Python Laboratory	ES	2	0	0	2	1
10.	26ME201L	Innovation for Engineering and Technology Laboratory	PC	2	0	0	2	1
11.	26TP2G1P	Career Skill Development – II	CG	2	0	0	2	1*
Total				31	17	2	8	20

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

SEMESTER III

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	26MA3C1T	Mathematical Statistics and Numerical Methods	BS	5	3	1	0	4
2.	26EE3C4T	Electrical Drives and Control	ES	3	3	0	0	3
3.	26ME3C1T	Engineering Materials and Metallurgy	PC	3	3	0	0	3
4.	26ME302T	Strength of Materials	PC	3	3	1	0	4
5.	26ME303T	Engineering Thermodynamics	PC	3	3	1	0	4
6.	26ME304T	Manufacturing Processes	PC	3	3	0	0	3
7.	26MY3Y1T	Disaster Management	MC	2	2	0	0	0
PRACTICALS								
8.	26EE3C1L	Electrical Drives and Control Laboratory	ES	3	0	0	3	1.5
9.	26ME301L	Computer Aided Machine Drawing Laboratory	PC	3	0	0	3	1.5
10.	26TP3G1P	Career Skill Development – III	CG	2	0	0	2	1*
11.	26TP3G2P	Internship#	CG	0	0	0	0	1#
Total				30	20	3	8	24

SEMESTER IV

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	26ME401T	Fluid Mechanics and Machinery	PC	5	3	1	0	4
2.	26ME402T	Machining Processes	PC	3	3	0	0	3
3.	26ME403T	Kinematics of Machinery	PC	3	3	1	0	4
4.	26ME404T	Thermal Engineering	PC	3	3	0	0	3
5.	26OE304T	Open Elective - I	OE	3	3	0	0	3
6.	26MY3Y1T	Life Skill for Engineers ^s	MC	1	1	0	0	1*
THEORY CUM PRACTICAL								
7.	26ME401I	Fluid Power Automation	PC	4	2	0	2	3
PRACTICALS								
8.	26ME401L	Strength of Materials and Fluid Machinery Laboratory	PC	3	0	0	3	1.5
9.	26ME402L	Manufacturing and Machining Processes Laboratory	PC	3	0	0	3	1.5
10.	26ME401P	Mini Project	PC	2	0	0	2	1
11.	26TP4G1P	Language Laboratory	HS	2	0	0	2	1
12.	26TP4G1P	Career Skill Development – IV	CG	2	0	0	2	1*
Total				34	18	2	14	25

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

SEMESTER V

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	26ME5C1T	Design of Machine Elements	PC	5	3	1	0	4
2.	26ME502T	Dynamics of Machinery	PC	5	3	1	0	4
3.	26ME503T	Engineering Metrology	PC	3	3	0	0	3
4.	26ME E1*	Professional Elective -I	PE	3	3	0	0	3
5.	26ME E2*	Professional Elective -II	PE	3	3	0	0	3
6.	26ME L0*	Open Elective – II	OE	3	3	0	0	3
7.	26MY5Y1T	Start-ups & Entrepreneurship	MC	2	2	0	0	2*
PRACTICALS								
8.	26ME501L	Thermal Engineering Laboratory	PC	3	0	0	3	1.5
9.	26ME502L	Metrology and Dynamics Laboratory	PC	3	0	0	3	1.5
10.	26TP5G1P	Career Skill Development – V	CG	2	0	0	2	1*
11.	26TP5G2P	Internship#	CG	0	0	0	0	1/2/3#
Total				32	20	2	8	23

SEMESTER VI

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	26ME601T	Heat and Mass Transfer	PC	5	3	1	0	4
2.	26ME602T	Finite Element Analysis	PC	5	3	1	0	4
3.	26ME603T	Design of Mechanical Transmission Systems	PC	5	3	1	0	4
4.	26ME604T	Project and Financial Management	PC	3	3	0	0	3
5.	26 ME E3*	Professional Elective – III	PE	3	3	0	0	3
6.	26 ME E4*	Professional Elective – IV	PE	3	3	0	0	3
PRACTICALS								
7.	26ME601L	Heat Transfer Laboratory	PC	3	0	0	3	1.5
8.	26ME602L	Analysis and Simulation Laboratory	PC	3	0	0	3	1.5
9.	26TP2G1P	Career Skill Development – II	CG	2	0	0	2	1*
Total				32	18	3	8	24

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

SEMESTER VII

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	26ME701T	Applied Data Science	PC	3	3	0	0	3
2.	26ME702T	Mechatronics and IoT	PC	3	3	0	0	3
3.	26ME703T	Topology Optimization and Generative Design	PC	5	3	1	0	4
4.	26ME704T	Semiconductor Manufacturing	PC	3	3	0	0	3
5.	26MEE5*	Professional Elective – V	PE	3	3	0	0	3
6.	26MEE6*	Professional Elective – VI	PE	3	3	0	0	3
7.	26AC7Y1T	Research Skill Development	AC	2	0	0	2	0
PRACTICALS								
8.	26ME701L	Data Science laboratory	PC	3	0	0	3	1.5
9.	26 ME702L	Mechatronics Laboratory	PC	3	0	0	3	1.5
10.	26GE7C1T	NCC/NSS/Sports/YRC/RRC/Liberal Arts/Social Activities	GE	0	0	0	0	3*
11.	26TP7G2P	Internship#	CG	0	0	0	0	1/2/3#
Total				28	18	1	8	22

* NCC B Certificate / Sports Certificates in National & International Level 3 Extra Credits (Waiving)

Capstone Project by Minor and Honour Students

SEMESTER VIII

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
PRACTICALS								
1.	26ME801P	Project Work	CG	16	0	0	16	8
Total				16	3	0	16	8

#Internship 3 additional credits not accounted for CGPA is offered based on the Internship duration

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 166

Note:

HS- Humanities and Social Sciences Courses; BS- Basic Science Courses; ES- Engineering Science Courses; PC- Professional Core Courses; PE- Professional Elective Courses; GE- General Elective Courses; OE - Open Elective Courses; CGC-Career Guidance Courses; MC- Mandatory Courses; AC- Audit Courses.

L: Lecture

T: Tutorial

P: Practical

C: Credit

1 Hour Lecture = 1 credit

1 Tutorial = 1 credit

2 Hours Practical = 1 credit

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

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

Professional Elective Courses - Verticals

Professional Electives	Vertical 1	Vertical2	Vertical 3	Vertical 4	Vertical 5
	Design	Manufacturing	Thermal Engineering	Industrial Engineering	Computer Programing
Elective - I	Computer Aided Design and Prototyping	Additive Manufacturing	Refrigeration and HVAC System	Production Planning and Control	Object Oriented Programming
Elective- II	Tool Design	Welding Engineering	Renewable Energy Systems	Lean Manufacturing	C Programming
Elective- III	Tribological Design	Digital Manufacturing and IoT	Gas Dynamics and Jet Propulsion	Supply Chain Analytics	Programmable Logic Controllers
Elective- IV	Mechanical Vibrations	Drone Technologies	Battery Technology	Quality Engineering	Advanced Statistics and Data Analytics
Elective- V	Digital Twin	Design for Manufacturing and Assembly	Vehicle Technology	Life Cycle assessment	
Elective - VI	Electric Vehicle Design	Machine Learning for Intelligent Systems	Energy Conservation and Auditing	Optimization Techniques in Design	
Elective - VII	Integrated Product Design and Development	Non-Destructive Evaluation of Materials	Bio-fuel Technology		
Elective – VIII	Composite Materials and Characterization		Computational Fluid Dynamics		

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E. / B.Tech. (Common to all Branches)								
26 EN 1C1I – English Essentials - I								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I	2	0	2	60	3	50	50	100
Basics of Communication Listening – Telephone conversation & Writing message, gap filling Reading – Telephone message, bio-note Writing –Personal profile Grammar – Simple present tense, Present continuous tense, Asking questions (WH questions) Vocabulary – One word substitution, Synonyms								[6]
Narration Listening –Travel podcast / Watching a travel documentary Reading – An excerpt from a travelogue, Newspaper Report Writing – Narrative (Event, personal experience etc.) Grammar – Subject – verb agreement, Simple past, Past continuous Tenses Vocabulary – Antonyms, Word formation (Prefix and Suffix)								[6]
Description Listening – Conversation, Radio/TV advertisement Reading – A tourist brochure and planning an itinerary, descriptive article / excerpt from literature Writing – Definitions, Descriptive writing, Checklists Grammar – Future tense, Perfect tenses, Preposition Vocabulary – Adjectives and Adverbs								[6]
Classification Listening – Announcements and filling a table Reading – An article, social media posts and classifying (channel conversion – text to table) Writing – Note making, Note taking and Summarizing, a classification paragraph; Grammar – Connectives, Transition words Vocabulary –Contextual vocabulary, Words used both as noun and verb, Scientific and Technical vocabulary								[6]
Expression of Views Listening – Debate / Discussion 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.								[6]
Lab Activity - Speaking 1. Self-Introduction a) Introducing oneself b) Telephone conversation c) Relaying telephone message d) Role play 2. Narration a) Narrating one’s personal experience in front of a group (formal and informal context) Ex.: First day in college / vacation / first achievement etc. 3. Conversation a) Making conversation - formal and informal b) Turn taking and Turn giving c) Small talk (JaM) 4. Short Speech a) Giving short speeches on topics like College Clubs and their activities in the college / Campus Facilities / native place and its major attractions.								[30]

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

5. Discussion		
a) Taking part in a group discussion on general topics		
b) Debating on topics of interest and relevance.		
Total Hours: (Lecture - 30; Lab Activity- 30)		60
Text Book(s):		
1.	"English for Engineers and Technologists" Volume I by Orient Blackswan, 2022	
2.	"English for Science & Technology-I" by Cambridge University Press, 2023	
Reference(s):		
1.	"Interchange" by Jack C. Richards, Fifth Edition, Cambridge University Press, 2017.	
2.	"English for Academic Correspondence and Socializing" by Adrian Wallwork, Springer, 2011.	
3.	"The Study Skills Handbook" by Stella Cortrell, Red Globe Press, 2019	
4.	www.uefap.com	

- **SDG 4 -Quality Education**

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
26MA1C3T - Differential Calculus								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I	3	1	0	60	4	40	60	100
Matrices								
Characteristic equation – Eigen values and Eigen vectors of a real matrix – Properties of Eigen values and Eigen vectors – Cayley-Hamilton theorem – Orthogonal transformation of a symmetric matrix to diagonal form							[9]	
Differential Calculus								
Curvature – Radius of curvature (Cartesian and Polar coordinates) – Centre of curvature – Circle of curvature							[9]	
Functions of Several Variables								
Partial differentiation – Homogeneous functions and Euler’s theorem – Jacobians – Taylor’s series for functions of two variables – Maxima and minima of functions of two variables – Constrained maxima and minima (Lagrange’s method of undetermined multipliers)							[9]	
Differential Equations								
Linear differential equations of second and higher order with constant coefficients – R.H.S is of the form e^{ax} , $\sin ax$, $\cos ax$, x^n , $n > 0$ – Simultaneous first-order linear equations with constant coefficients – Method of variation of parameters							[9]	
Integration								
Definite and Indefinite integrals – Techniques of Integration – Integration by substitution – Integration by parts – Bernoulli’s formula – Integration of rational (algebraic) functions by partial fraction method							[9]	
Total Hours: 45 + 15 (Tutorial + Hands-on)							60	
Text Book(s):								
1.	Grewal B.S, “Higher Engineering Mathematics”, 45 th Edition, Khanna Publishers, New Delhi, 2024							
2.	David C Lay, Steven R Lay and Judith McDonald, “Linear Algebra and its Applications”, 5 th Edition, Pearson Education, 2023							
Reference(s):								
1.	Kreyszig Erwin, “Advanced Engineering Mathematics”, 10 th Edition, John Wiley & Sons, New Delhi, 2023							
2.	Gilbert Strang, “Introduction to linear algebra”, 5 th Edition, Wellesley-Cambridge Press, 2021							
3.	Glyn James, Phil Dyke, “Modern Engineering Mathematics”, 6 th Edition, Pearson Education, 2020							
4.	Bali N P and Manish Goyal, “A text book of Engineering Mathematics”, 9 th Edition, Laxmi Publications, 2017							

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
26PH1C1T - Engineering Physics (MECH, MCT, RA, CIVIL & TXT)								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I/II	3	0	0	45	3	40	60	100
<p>*Laser Physics: Properties of laser- Absorption and emission of radiation- Spontaneous and stimulated emission-Einstein's coefficients - Basic components of laser - Types of lasers -Gas lasers (CO₂), solid-state lasers (Nd: YAG), Semiconductor laser (Homojunction and Hetero junction) Applications of laser – Holography - Difference between hologram and photograph - Recording of hologram and reconstruction of image.</p>								[9]
<p>*Ultrasonics and Acoustics: Introduction - Properties of ultrasonics – Production - Magnetostriction and piezoelectric generator – Ultrasonic detection - Acoustical grating - Applications of ultrasonic waves- Detection of flaws in metals – Cleaning and clearing – SONAR - Acoustics of buildings – Reverberation - Weber Fechner law - Absorption coefficient and its determination - Factors affecting architectural acoustics of a building and remedies</p>								[9]
<p>*Heat and 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.</p>								[9]
<p>*Mechanics and Properties of matter: Mechanics: One and two dimensional kinematics: Reference frames and displacement - Average and instantaneous velocity - Motion at constant acceleration - Freely falling objects - Projectile motion - Solving problems. Properties of matter: Elastic behavior of material - Types of elastic moduli - Non-uniform bending – Uniform bending - Application - Torsional pendulum - Couple per unit twist of a wire - Time period - Application - Determination of rigidity modulus.</p>								[9]
<p>**Advanced Materials and Nanotechnology: Advanced Materials - Metallic glasses – preparation, properties and applications - Shape memory alloys (SMA) – Characteristics - Properties of NiTi alloy applications – Nanomaterials – Properties - Top-down process - Ball Milling method – Bottom-up process - Vapor phase deposition - Carbon nano tube (CNT) – Properties - Preparation by electric arc method, Applications of carbon nanotube in engineering and technology.</p>								[9]
Total Hours:								45
Text Book(s):								
1.	M. N. Avadhanulu, P. G. Kshirsagar, T.V.S. Arun Murthy "A Text Book of Engineering Physics", S Chand Publications, New Delhi, 2022.							
2.	Douglas C. Giancoli "Physics Principles with Applications" 7 th Edition, Pearson Education Limited, 2021							
3.	D. Halliday, R. Resnick and J. Walker "Fundamentals of Physics" 12 th Edition, John Wiley & Sons, Inc., New York, 2022							
Reference(s):								
1.	H. K. Malik, A. K. Singh "Engineering Physics" McGraw Hill Education Private Limited, New Delhi, 2018.							
2.	D. R. Joshi "Engineering Physics" McGraw Hill Education Private Limited, New Delhi. 2010							
3.	B.B.Laud "Lasers and Non-Linear Optics" New Age International Publications, New Delhi, 2015							

* SDG 9: Industry, Innovation, and Infrastructure

** SDG 7: Affordable and Clean Energy

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E – Mechanical ,RA & Mechatronics								
26CH1C1T - Applied Chemistry								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I	3	0	0	45	3	40	60	100
Advances in Water Technology* Water- Quality Parameters-Physical, Chemical and Biological-hardness of water and its types-Impacts of hard water in Industries (Scale, Sludge and Corrosion)-Determination of Hardness by EDTA method- Internal treatment (carbonate, phosphate and Calgon conditioning) External treatment methods: Zeolite process- Ion exchange process in industries– Reverse osmosis for domestic, food and beverage industries- Municipal water treatment.								[9]
Corrosion and its control ** Corrosion-Chemical corrosion – Pilling – Bedworth rule – Electrochemical corrosion —— Factors influencing corrosion – Different forms of Corrosion-Galvanic, Differential aeration,Pitting, Waterline, Pipe line and Stress corrosion-Corrosion control – Sacrificial anode and Impressed current methods – Corrosion inhibitors – Protective coatings – Paints – Constituents and Functions – Metallic coatings – Electroplating (Au) and Electroless (Ni) plating.								[9]
Chemical Sensors** Sensors – Chemical Sensors – Classification, Principles, Characteristics and working— Types: Potentiometric Sensors -Amperometric Sensors -Conductometric sensors— Electrochemical Biosensors -Working and Types: Enzyme Sensors – Bio Affinity Sensors - DNA Sensors-Optical biosensor. Nano Technology in Chemical Sensors- Application of chemical sensors in industries.								[9]
Energy Storage and Conversion *** Cells and Batteries- Introduction and Types: Lead-Acid Battery-Ni-Cd Battery-Zinc-Air battery-Advanced batteries: Working principle and applications of Lithium-Ion Battery, Sodium-Ion Batteries, and Magnesium ion battery. Fuel Cells: Hydrogen Oxygen Fuel Cell - Microbial Fuel Cell - Organic Solar Cell: Working Principle and Applications.								[9]
Sustainable Fuels and Environmental Impact *** Fuels: Introduction- -Analysis of coal (proximate and ultimate)-E-Diesel-Methanol to Gasoline(MTG) process-E-Gasoline-Bio-diesel-Cellulosic ethanol and Bio mass conversion- -Knocking: Octane number and Cetane number-Calorific value - higher and lower calorific values-Ignition temperature- spontaneous ignition temperature-Viscosity- Explosive range- Flue gas analysis – CO, CO ₂ , NO _x , HC and smoke emissions-Carbon foot print.								[9]
Total Hours:								45
Text Book(s):								
1.	Jain. P.C. and Monica Jain, “Engineering Chemistry”, Dhanpatrai publishing co. New Delhi, 16th Edition, 2015.							
Reference(s):								
1.	Palanna, O G., “Engineering Chemistry” Tata McGraw-Hill Pub.Co.Ltd, New Delhi, 2017.							
2.	Roussak, O V. and Gesser, H D. “Applied Chemistry-A Text Book for Engineers.							
3.	Shikha Agarwal, “Engineering Chemistry-Fundamentals and Applications”, Cambridge University Press, Delhi, 2nd Edition, 2019.							

*SDG 6: Clean Water and Sanitation

**SDG 9: Industry, Innovation, and Infrastructure

***SDG 12: Responsible Consumption and Production

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

Syllabus											
K.S.Rangasamy College of Technology – Autonomous R2026											
26ME1C1T - Engineering Drawing											
Common to MECH, MCT, CIVIL & TXT Branches											
Semester	Hours/Semester						Credit	Maximum Marks			
	CI		LI	TW	SL	TH		C	CA	ES	Total
	L	T	P								
I	1	2	0				3	40	60	100	
Introduction to Engineering Drawing and Plane Curves* Use of drawing instruments – BIS conventions and specifications – Size, layout and folding of drawing sheets – Lettering and dimensioning – Drawing sheet layouts - Title block – Line types – Construction of ellipse, parabola and hyperbola (Eccentricity method) - Construction of rectangular hyperbola - Construction of cycloids, epicycloids and hypocycloids										[3+12]	
Orthographic Projection* Introduction to orthographic projections – Planes of projection – Projection of points and lines inclined to both planes – Projection of planes (Inclined to one plane and parallel to other – Inclined to both planes) - Conversions of pictorial views to orthographic views										[3+12]	
Projection of Solids* Projections of simple solids: prism, pyramid, cylinder and cone (Axis of solid inclined to both HP and VP).										[3+12]	
Sections of solids and Development of surfaces* Sections of solids :Prism, Cylinder, Pyramid, Cone – Auxiliary Views - Draw the sectional views of geometrical solids, objects from industry - Development of surfaces of Right solids – Prism, Pyramid, Cylinder and Cone										[3+12]	
Isometric Projection* Principles of isometric projection – Isometric scale – Isometric projections of simple solids: Prism, pyramid, cylinder and cone - Isometric projections of frustum and truncated solids - Combination of two solid objects in simple vertical positions.										[3+12]	
Total Hours:										75	
Weightage: Continuous Assessment: 40% , End Semester Examinations: 60% .											
Continuous Assessment Methodology: Assignments (20%), Solution to application-oriented problems using software (20%), Solving of GATE questions (20%), Continuous Assessment Test (40%).											
Text Book(s):											
1.	Bhatt N.D., —Engineering DrawingII, Charotar Publishing House Pvt. Ltd., 54 th Edition, Gujarat, 2023.										
2.	Dhawan R.K., “A Text Book of Engineering Drawing” 3rd Revised Edition, S. Chand Publishing, New Delhi, 2023.										
Reference(s):											
1.	Natarajan K.V., “A Text Book of Engineering Graphics”, Dhanalakshmi Publishers, Chennai, 2021.										
2.	Venugopal K., “Engineering Graphics”, New Age International (P) Limited, 2024.										
SDG No(s): 9 - Industry Innovation and Infrastructure											

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
Common to ALL Branches								
26TA1YIT - Heritage of Tamil								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I	1	0	0	15	1	40	60	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 – Sculpture 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, Yazh and Nadhaswaram - Role of Temples in Social and Economic Life of Tamils.								[3]
Folk and Martial Arts Therukoothu, Karagattam, Villu Pattu, Kaniyan Koothu, Oyillattam, Leather puppetry, 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).							
3.	கீழடி – வைகை நதிக்கரையில் சங்ககால நகர நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
4.	பொருநை - ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
5.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL – (in print).							
6.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies).							
7.	Historical Heritage of the Tamils (Dr.S.V.Subaramanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).							
8.	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)							
9.	Keeladi - 'Sangam City Civilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)							
10.	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author).							
11.	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu).							
12.	Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) – Reference Book.							

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

Syllabus

K.S.Rangasamy College of Technology – Autonomous R2026								
B Common to ALL Branches								
26TA1YIT - தமிழர் மரபு								
Semester	Hours/Week			Total Hours	Credit C	Maximum Marks		
	L	T	P			CA	ES	Total
I	1	0	0	15	1	40	60	100
<p>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.</p>								[3]
<p>மரபு – பாறை ஓவியங்கள் முதல் நவீன 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 திருவள்ளூர் சிலை – இசைக் கருவிகள் – மிருதங்கம், பறை, வீணை, யாழ், நாதல்வரம் – தமிழர்களின் சமூக பொருளாதார வாழ்வில் கோவில்களின் பங்கு.</p>								[3]
<p>நாட்டுப்புறக் கலைகள் மற்றும் வீர விளையாட்டுகள்: தெருக்கூத்து, கரகாட்டம், வில்லுப்பாட்டு, கணியான் கூத்து, ஓயிலாட்டம், தோல்பாவைக் கூத்து, சிலம்பாட்டம், வளரி, புலியாட்டம், தமிழர்களின் விளையாட்டுகள்.</p>								[3]
<p>தமிழர்களின் திணைக் கோட்பாடுகள்: தமிழகத்தின் தாவரங்களும், விலங்குகளும் – தொல்காப்பியம் மற்றும் சங்க இலக்கியத்தில் அகம் மற்றும் புறக் கோட்பாடுகள் - தமிழர்கள் போற்றிய அறக்கோட்பாடு - சங்ககாலத்தில் தமிழகத்தில் எழுத்தறிவும், கல்வியும் - சங்ககால நகரங்களும் துறை முகங்களும் - சங்க காலத்தில் ஏற்றுமதி மற்றும் இறக்குமதி – கடல்கடந்த நாடுகளில் சோழர்களின் வெற்றி.</p>								[3]
<p>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, கையெழுத்துப்படிிகள் - தமிழ்ப் புத்தகங்களின் அச்ச வரலாறு.</p>								[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).							
3.	கீழடி – வைகை நதிக்கரையில் சங்ககால நகர நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
4.	பொருளை – ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
5.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL – (in print).							
6.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies).							
7.	Historical Heritage of the Tamils (Dr.S.V.Subaramanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).							
8.	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)							
9.	Keeladi - 'Sangam City Civilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)							
10.	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author).							
11.	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu).							
12.	Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) – Reference Book.							

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
Common to ALL Branches								
26MY2Y1T - Universal Human Values								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I	3	0	0	45	3*	100	--	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 Fulfill The Basic Human Aspirations.								[9]
Harmony in the Human Being** Understanding 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.								[9]
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.								[9]
Harmony in the Nature/Existence*** Understanding Harmony in the Nature-Interconnectedness, Self-Regulation and Mutual Fulfillment Among the four Orders of Nature – Realizing Existence as Co-Existence At All Levels –The Holistic Perception of Harmony In Existence.								[9]
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 Base Life and Profession								[9]
Total Hours								45
Text Book(s):								
1.	Gaur, R R, Asthana, R and Bagaria, G P. “A Foundation Course in Human Values and Professional Ethics”, 2 nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034-47-1							
2.	Gaur, R R, Asthana, R and Bagaria, G P. “Teachers’ Manual for A Foundation Course in Human Values and Professional Ethics”, 2 nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034-53-2							
Reference(s):								
1.	Jeevan Vidya: EkParichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.							
2.	Human Values, A.N. Tripathi, New Age International. Publishers, New Delhi, 2004.							

*SDG 4 – Quality Education

**SDG 3 – Good Health and Well Being

***SDG 16 – Peace, Justice and Strong Institutions

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026										
Common to MECH, MCT, CIVIL RA Branches										
26PH1C1L – Engineering Physics Laboratory										
Semester	Hours/Semester						Credit	Maximum Marks		
	CI		LI	TW	SL#	TH		C	CA	ES
	L	T	P							
I	0	0	2			30	1	60	40	100
List of Experiments										
<ol style="list-style-type: none"> 1. Determination of the wave length of the laser using grating 2. Determination of the particle size of the given powder using laser source 3. Determination of the acceptance angle and numerical aperture of the given optical fiber 4. Determination of Young's modulus of a given material using uniform bending 5. Determination of Young's modulus of a given material using non uniform bending 6. Determination of Stefan's Constant 7. Determination of rigidity modulus of a wire by using Torsional pendulum 8. Determination of dielectric properties of solids (Teflon, Glass, Bakelite) 9. Determination of dielectric properties of liquids (Carbon Tetrachloride) 10. Develop coding for any one of the above experiments / developing a project / a product 										

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026											
Common to MECH, MCT, CIVIL RA Branches											
26CH1C1L – Chemistry Laboratory											
Semester	Hours/Semester						Credit	Maximum Marks			
	CI		LI	TW	SL#	TH		C	CA	ES	Total
	L	T	P								
I	0	0	2			30	1	60	40	100	
List of Experiments:											
<ol style="list-style-type: none"> 1. Estimation of total hardness of given water sample by complexometric method. 2. Determination of dissolved oxygen in water sample by Winkler's method. 3. Estimation of acid mixture using standard NaOH by conductometric sensor. 4. Determination of percentage corrosion using potassium dichromate with a potentiometric sensor. 5. Determination of strength of HCl acid using pH sensor. 6. Determination different types of alkalinity present in given borewell water. 7. Estimation of amount of acid in the given solution by conductivity meter. 8. Estimation of iron using standard dichromate solution by EMF measurement. 9. Determination of water quality parameters of the given water sample. 10. Estimation of calcium in cement by EDTA method. 											

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026											
Common to MECH, MCT, CIVIL & TXT Branches											
26ME1C2L – Computer Aided Drafting Laboratory											
Semester	Hours/Semester						Credit	Maximum Marks			
	CI		LI	TW	SL#	TH		C	CA	ES	Total
	L	T	P								
I	0	0	2			30	1	60	40	100	
Introduction to Drafting Software											
<ul style="list-style-type: none"> • Introduction to Computer Aided Drafting (CAD) • Features and applications of drafting software in Mechanical Engineering • Installation and setup of drafting software • Creation of new files and workspace setup • Introduction to toolbars and interface components • Draw toolbar: line, circle, arc, polygon, rectangle, spline, etc. • Modify toolbar: move, copy, rotate, trim, extend, mirror, scale, offset, fillet, chamfer • Properties toolbar: layers, colors, line types, object properties • Dimensioning toolbar: linear, angular, radial, aligned, ordinate dimensions 											
2D Drafting and Dimensioning											
<ul style="list-style-type: none"> • Preparation of basic 2D engineering drawings • Drawing of geometric figures and machine components • Use of layers, hatching, and annotations • Application of dimensions and tolerances in 2D drawings • Editing and modification of 2D drawings • Printing and plotting of 2D drawings 											
3D Modeling and Dimensioning											
<ul style="list-style-type: none"> • Introduction to 3D drafting and modeling concepts • Creation of 3D wireframe, surface, and solid models • 3D drawing tools: extrusion, revolve, sweep, loft, and boolean operations • Visualization and viewing techniques in 3D environment • Dimensioning and annotation of 3D models • Conversion of 2D drawings into 3D models 											
References											
1.	Bhatt N.D., "Engineering Drawing", Charotar Publishing House Pvt. Ltd., 54 th Edition, Anand, Gujarat, 2023.										
2	D.M.Kulkarni,A.P.RAstogi, A.K.Sarkar, "Engineering Graphics with Auto CAD", PHI Private Limited, New Delhi, 2009										
SDG No(s): 9 - Industry Innovation and Infrastructure											

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R 2026								
B.E. Mechanical Engineering								
26ME101L - Design Thinking Laboratory								
Semester	Hours/Week			Total Hrs	Credit	Maximum Marks		
	L	T	P			C	CA	ES
I	0	0	2	30	1	60	40	100
Introduction to Design Thinking Concept and significance of Design Thinking. Design Thinking process stages: Empathize, Define, Ideate, Prototype, and Test. Applications of Design Thinking in engineering and societal problem-solving.								[6]
Problem Identification and User Analysis Understanding real-world engineering and societal problems. User need analysis techniques. 5 Whys method. AEIOU framework (Activities, Environment, Interaction, Objects, Users).								[6]
User-Centered Design Tools Persona's development. Empathy mapping. User stories creation. Problem framing and context interpretation.								[6]
Ideation and Solution Development Creative thinking techniques. Brainstorming and idea generation methods. Idea evaluation techniques. MVP (Minimum Viable Product) visualization.								[6]
Validation and Testing User validation methods: interviews and surveys. Kano model for prioritization. Desirability testing. Feedback analysis and refinement.								[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..	www.dsource.in , The Resource for Design by e-Kalpa Design Team, IDC, IIT Bombay, DoD, IIT Guwahati & NID, Bengaluru							
4.	Jeff Gothelf and Josh Seiden, "Lean UX: Designing Great Products with Agile Teams", 2nd Edition, O'Reilly Media, 2016.							
5	Bella Martin and Bruce Hanington, "Universal Methods of Design", 1st Edition, Rockport Publishers, 2012.							

SDG 9 – Industry Innovation and Infrastructure

Course Designer(s)

1. Mr.D.Dhanasekaran – ghanasekarand@ksrct.ac.in
2. Mr.S.Jayamani- jayamani@ksrct.ac.in

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026								
Common to All Branches								
26 TP 1G1P - Career Skill Development I - Aptitude I								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P		C	CA	ES	Total
I	0	0	2	25	1	100	-	100
Logical Reasoning Inductive Reasoning - Analogies - Alpha and numeric series - Number Series – odd man out - Coding and Decoding - Order and Ranking - Direction and distance								[5]
Quantitative Aptitude – Part 1 Number system - Squares & cubes - Divisibility - Unit digits - Remainder Theorem - HCF & LCM - Geometric and Arithmetic progression - Powers & Exponents								[5]
Verbal & Analytical Reasoning Blood Relations and Coded Relations - Seating Arrangements – Analytical Reasoning (PUZZELS) – Coded Inequality								[5]
Quantitative Aptitude – Part 2 Average - Ratio and proportion – Ages – Partnership– Percentage - Profit & loss – Discount - Mixture and Allegation								[5]
Quantitative Aptitude – Part 3 Time & Work - Pipes and cistern – Time, Speed & distance - Trains - Boats and Streams - Simple interest and Compound interest.								[5]
Total Hours								25
Reference(s):								
1.	Aggarwal, R.S. 'A Modern Approach to Verbal and Non-verbal Reasoning', Revised Edition 2008, Reprint 2009, S.Chand & Co Ltd., New Delhi.							
2.	Abhijit Guha, 'Quantitative Aptitude', McGraw Hill Education, 6 th edition, 2016							
3.	Dinesh Khattar, 'Quantitative Aptitude For Competitive Examinations', Pearson Education 2020							
4.	Anne Thomson, 'Critical Reasoning: A Practical Introduction' Lexicon Books, 3 rd edition, 2022. Warsaw							

Course Designer

1. R. Poovarasam - poovarasam@ksrct.ac.in
2. G. Damotharan - damotharan@ksrct.ac.in

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E. / B.Tech. (Common to all Branches)								
26 EN 1C11 – English Essentials – II								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	2	0	2	60	3	50	50	100
Cause and Effect Listening – Radio / TV / Podcast Interview (survivors' tale) and framing a set of instructions / Do's and Don'ts 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								[6]
Compare and Contrast Listening –Product reviews and gap fill exercises, Short Talks (like TED Talks) for specific information 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								[6]
Problem and Solution Listening – Group discussion (case study) 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.								[6]
Reporting Listening – Listening to news reading 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								[6]
Presentation Listening – Job interview, Telephone interview Reading – Job advertisement and company profile and making inferences Writing –Job application (cover letter and CV) Grammar –Prepositional phrases Vocabulary – Fixed expressions, Collocations.								[6]
Lab Activity - Speaking 1. Interview in Social Context a) Asking questions and answering b) Conducting an interview (of an achiever / survivor) c) Role play 2. Persuasive Skills a) Speaking about specifications of a product (Eg. Home appliances) b) Persuasive Talk c) Role play activity 3. Case Study a) Discussions on Case Study to find solutions for problems in professional contexts b) Analytical discussion on various aspects of a given problem.								[30]

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

4. Visual Interpretation		
a) Describing visual content (Pictures/Table/Chart) using appropriate descriptive language and making appropriate inferences		
b) Giving recommendations.		
5. Presentation		
a) Making presentation with visual component (PPT slides) (job interview / project / innovative product presentation)		
Total Hours: (Lecture -30; Lab Activity- 30)		60
Text Book(s):		
1.	"English for Engineers and Technologists" Volume I by Orient Blackswan, 2022	
2.	"English for Science & Technology-II" by Cambridge University Press, 2023	
Reference(s):		
1.	"Communicative English for Engineers and Professionals" by Bhatnagar Nitin, Pearson India, 2010.	
2.	"Take-Off–Technical English for Engineering" by David Morgan, Garnet Education, 2008.	
3.	"Advanced Communication Skills" by Mathew Richardson, Charlie Creative Lab, 2020.	
4.	www.uefap.com	

- **SDG 4 -Quality Education**

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
Common to Mech, MCT, Civil, Textile & Robotics								
26MA2C3T - Integral Calculus								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	3	1	0	60	4	40	60	100
Multiple Integrals								
Double integration – Cartesian and polar coordinates – Change of order of integration – Area as double integral – Triple integration in Cartesian coordinates – Change of variables - Cartesian to polar coordinates and Cartesian to Cylindrical coordinates.							[9]	
Three Dimensional Analytical Geometry								
Direction cosines – Direction ratios – Angle between two lines – Equation of plane – Equation of straight line – Coplanar lines – Points of intersection – Shortest distance between skew lines							[9]	
Vector Calculus								
Gradient of a scalar point function – Unit normal vector - Directional derivative – Angle of intersection of two surfaces – Divergence and Curl (excluding vector identities) – Solenoidal and Irrotational vector fields – Scalar potential function							[9]	
Analytic Functions								
Analytic function – Necessary and Sufficient conditions (excluding proofs) – Harmonic function – Orthogonal properties of an analytic function – Construction of an analytic function – Cauchy's Integral theorem – Cauchy's integral formula (excluding proofs)							[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]	
Total Hours: 45 + 15 (Tutorial + Hands-on)							60	
Text Book(s):								
1.	Grewal B.S, "Higher Engineering Mathematics", 45 th Edition, Khanna Publishers, Delhi, 2024							
2.	Kreyszig Erwin, "Advanced Engineering Mathematics", 10 th Edition, John Wiley & Sons, New Delhi, 2023							
Reference(s):								
1.	Glyn James, Phil Dyke, "Modern Engineering Mathematics", 6 th Edition, Pearson Education, 2020							
2.	Dass H.K, "Advanced Engineering Mathematics", 22 nd Edition, Sultan Chand & Sons, New Delhi, 2019							
3.	Veerarajan T, "Engineering Mathematics", for Semesters I & II, 1 st Edition, Tata McGraw Hill Publishing Company, New Delhi, 2019							
4.	Bali N P and Manish Goyal, "A text book of Engineering Mathematics", 9 th Edition, Laxmi Publications, 2017							

Passed in BoS Meeting held on 17.12.2025
 Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026								
26IT2C1T-Problem Solving using Python								
Semester	Hours / Week			Total hrs	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	3	0	0	60	3	40	60	100
Introduction Introduction to Python – Strings – List – Tuples - Dictionaries – Basic Operators – Decision Making – Loops								[9]
Modular Design Modules – Python module – Namespaces – Importing modules – Loading and Execution – Program Routine – Functions – Parameter Passing - Types – Recursion								[9]
Files and Exception Handling* Introduction to files - Access Modes - Writing Data to a File – Reading Data from a File - Additional File Methods- Exceptions – Types, Handling Exceptions, User Defined Exceptions								[9]
NumPy Basics NumPy Data Types – NumPy Arrays - Creating, Adding items, Removing items, Printing Items, Sorting items, Reshaping, Indexing and Slicing.								[8]
GUI Programming and Graphics** GUI Programming toolkits – Introduction to Tkinter – Creating GUI widgets – Resizing – Configuring widget options – Creating Layouts – Radio buttons – Check boxes – Dialog boxes – Drawing using Turtle								[10]
Total Hours: 45								45
Text book(s)								
1.	John Paul Mueller, “Beginning Programming with Python”, 2 nd Edition, Wiley India Pvt Ltd, 2014							
2.	Usman Malik, “Python NumPy for Beginners: NumPy Specialization for data Scientists”, AI Publishing, 2021							
Reference(s):								
1.	Wesley J. Chun, “Core Python Applications Programming”, 3 rd Edition, Pearson Education, 2013							
2.	Allen B. Downey, “Think Python: How to Think like a Computer Scientist”, 2 nd Edition, O’Reilly Publishers, 2016.							
3.	Charles Dierbach, “Introduction to Computer Science using Python”, 2 nd Edition, Wiley India Pvt Ltd, 2015							
4.	Dr. R.Nageswara Rao “Core Python Programming”, DreamTech Press, 2 nd Edition, 2018							

** SDG-4 – Quality Education

* SDG-8 – Employment and decent work for all

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E – MECH, MCT, CIVIL								
26EE2C3T - Basic Electrical and Electronics Engineering								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	3	0	0	45	3	40	60	100
Electrical Circuits								
DC Circuits: Circuit Components: Conductor, Resistor, Inductor, Capacitor – Ohm’s Law - Kirchhoff’s Laws – Simple problems- Introduction to AC Circuits and Parameters: Waveforms, Average value, RMS Value, Instantaneous power, real power, reactive power and apparent power, power factor – Steady state analysis of RLC circuits (Simple problems only), Three phase supply – star and delta connection – power in three phase systems.								
[9]								
Electrical Machines								
Construction and Working principle- DC Generators, EMF equation, Applications. Working Principle of DC motors, Torque Equation, Applications. Construction, Working principle and Applications of Transformer, Three phase Alternator, Synchronous motor and Three Phase Induction Motor. Construction and working of BLDC Motor* .								
[9]								
Electrical Installations								
Domestic wiring , types of wires and cables, earthing - Types ,protective devices- switch fuse unit- Miniature circuit breaker-moulded case circuit breaker- earth leakage circuit breaker, Batteries - Types, UPS, Regulated Power Supply, safety precautions and First Aid								
[9]								
Basic Electronics								
PN Junction Diodes, Zener Diode –Characteristics Applications – Bipolar Junction Transistor-Biasing, MOSFET, IGBT – Types, I-V Characteristics and Applications, Review of number systems, logic gates, Combinational logic - representation of logic functions, K-map representations - minimization using K maps (Simple Problems only) - Ideal OP-AMP characteristics, Basic applications of op-amp – Inverting and Non-Inverting Amplifiers								
[9]								
Measurements and Instrumentation								
Functional elements of an instrument, Standards and calibration, Operating Principle, types -Moving Coil and Moving Iron meters, Measurement of three phase power, Energy Meter, Instrument Transformers- CT and PT, DSO- Block diagram- hall effect, photo sensors, Strain gauge, LVDT, proximity sensors.								
[9]								
Total Hours:							45	
Text Book(s):								
1.	D P Kothari and I.J Nagrath, “Basic Electrical and Electronics Engineering”, McGraw Hill Education, Second Edition, 2020							
2.	S.K. Bhattacharya “Basic Electrical and Electronics Engineering”, Pearson Education, Second Edition, 2019.							
1.	A.K. Sawhney, Puneet Sawhney ‘A Course in Electrical & Electronic Measurements & Instrumentation’, Dhanpat Rai and Co, 2015.							
2.	Sedha R.S., “A text book book of Applied Electronics”, S. Chand & Co., 2008							
3.	H.S. Kalsi, ‘Electronic Instrumentation’, Tata McGraw-Hill, New Delhi, 2010							
4.	James A. Svoboda, Richard C. Dorf, “Dorf’s Introduction to Electric Circuits”, Wiley, 2018.							

*SDG 9 – Industry Innovation and Infrastructure

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E - Mechanical Engineering								
26ME2C3T - Engineering Mechanics								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	3	1	0	60	4	40	60	100
Basics and Statics of Particles* Introduction - Units and Dimensions - Laws of Mechanics – Principle of transmissibility - Lamé's theorem, Parallelogram and Triangular law of forces. Vector Operations* Vectors – Vectorial representation of forces- Coplanar forces – Resolution and Composition of forces – Equilibrium of a particle – Forces in space - Equilibrium of a particle in space - Equivalent systems of forces.								[9]
Equilibrium of Rigid Bodies and Trusses* Free body diagram – Types of supports and their reactions – Moments and Couples – Moment of a force about a point and about an axis – Vectorial representation of Moments and Couples –Varignon's theorem - Equilibrium of rigid bodies in two dimensions.								[9]
Properties of Surfaces and Solids* Determination of Areas and Volumes - Centroid, Moment of Inertia of plane area (Rectangle, Circle, Triangle Using Integration Method; T Section, I Section, Angle Section, Hollow Section Using Standard Formula) - Parallel axis theorem and Perpendicular axis theorem- Polar Moment of Inertia - Mass Moment of Inertia of thin rectangular section.								[9]
Friction* Frictional force – Laws of Coloumb Friction – Simple contact friction – Ladder friction - Rolling resistance – Ratio of tension in belt. Dynamics of Particles* Displacement, Velocity, Acceleration and their relationship – Relative motion - Projectile motion in horizontal plane – Newton's law – Work energy equation – Impulse and Momentum.								[9]
Elements of Rigid Body Dynamics* Translation and Rotation of rigid bodies: Velocity and Acceleration – General plane motion: crank and connecting rod mechanism.								[9]
Total Hours: 45 + 15(Tutorial)							60	
Text Book(s):								
1.	Rajasekaran, S., Sankarasubramanian, G., Fundamentals of Engineering Mechanics, Vikas Publishing House Pvt. Ltd., 3 rd Edition, 2023.							
2.	Beer, F.P and Johnson Jr. E.R, "Vector Mechanics for Engineers", Statics and Dynamics, McGraw-Hill International, 11 th Edition, 2016.							
Reference(s):								
1.	Jayakumar, V. and Kumar, M, "Engineering Mechanics", PHI Learning Private Ltd, New Delhi, 2024							
2.	Hibbeler, R.C., "Engineering Mechanics", Vol. 1 Statics, Vol. 2 Dynamics, Pearson Education Asia Pvt. Ltd., 14 th Edition, 2023.							
3.	Bansal R.K, "Engineering Mechanics" Laxmi Publications (P) Ltd, 2021.							
4.	Irving H. Shames, Engineering Mechanics: Statics and Dynamics", Pearson Education Asia Pvt. Ltd, 4 th Edition, 2013.							
5.	James M. Gere and Timoshenko, "Mechanics of Materials", CBS Publisher, New Delhi, 6 th Edition, 2016							

*SDG 9 – Industry Innovation and Infrastructure

K. S. Rangasamy College of Technology – Autonomous R2026								
26CH2Y1T -Environmental Science and Sustainability								
Common to all Branches								
Semester	Hours / Week			Total hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	2	0	0	20	2	100	-	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.								[4]
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.								[4]
Sustainable Waste and Water Management Classification of Solid and Liquid Wastes- Waste Management: 5R Approach - Waste Management Process: Collection, Segregation, Treatment, Disposal - Municipal Waste (MSWM) - E-waste. Water Pollution and Wastewater Treatment: Nanotechnology, Bioremediation, Coagulation, Photocatalysis, Floating Wetlands (Example: Chennai Eco-restoration Projects), IoT-Enabled Pollution Monitoring, Industrial Discharge Regulation								[4]
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).								[4]
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)								[4]
Total Hours								20
Text Book(s):								
1.	Anubha Kaushik , C P Kaushik. Perspectives In Environmental Studies, New Age International publishers; Sixth edition (1 January 2018).							

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E - Mechanical Engineering								
26TA2Y1T - Tamils and Technology								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	1	0	0	15	1	40	60	100
Weaving and 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 – Minting Of Coins – Beads Making – Industries Stone Beads – Glass Beads – Terracotta Beads – Shell Beads/Bone Beats – Archeological Evidences -Gem Stone Types Described In Silappathikaram.								[3]
Agriculture and Irrigation Technology* Dam, Tank, Ponds, Sluice, Significance of Kumizhi Thoempu of Chola Period, Animal Husbandry – Wells Designed for Cattle Use – Agriculture and Agro Processing – Knowledge of Sea- Fisheries – Pearl – Conche Diving -Ancient Knowledge of Ocean – Knowledge Specific Society.								[3]
Scientific Tamil and 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.	கணிணித்தமிழ் - முனைவர் இல. சுந்தரம். (விகடன் பிரசுரம்).							
3.	கீழடி - வைகை நதிக்கரையில் சங்ககால நகர நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
4.	பொருநை - ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
5.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL – (in print).							
6.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies.							
7.	Historical Heritage of the Tamils (Dr.S.V.Subaramanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).							
8.	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)							
9.	Keeladi - 'Sangam City Civilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)							
10.	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author).							
11.	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu).							
12.	Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) – Reference Book.							

*SDG 4 – Quality Education

Passed in BoS Meeting held on 17.12.2025

Approved in Academic Council Meeting held on 03.01.2026

Syllabus								
K.S.Rangasamy College of Technology – Autonomous R2026								
B.E - Mechanical Engineering								
26TA2Y1T – தமிழரும் தொழில்நுட்பமும்								
Semester	Hours/Week			Total Hours	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	1	0	0	15	1	40	60	100
நெசவு மற்றும் பாணைத் தொழில்நுட்பம்: சங்ககாலத்தில் நெசவுத் தொழில் - பாணைத் தொழில்நுட்பம்-கருப்பு சிவப்புபாண்டங்கள் - பாண்டங்களில் கீறல் குறியீடுகள்.								[3]
வடிவமைப்பு மற்றும் கட்டிடத் தொழில்நுட்பம்: சங்க காலத்தில் வடிவமைப்பு மற்றும் கட்டுமானங்கள் & சங்க காலத்தில் வீட்டுப் பொருட்களில் வடிவமைப்பு - சங்க காலத்தில் கட்டுமானப் பொருட்களும் நடுகல்லும் - சிலப்பதிகாரத்தில் மேடை அமைப்பு பற்றிய விவரங்கள் - மாமல்லபுரச் 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]
உற்பத்தித்தொழில்நுட்பம்: கப்பல் கட்டும் கலை - உலோகவியல் - இரும்புத் தொழிற்சாலை -இரும்பை உருக்குதல், எஃகு - வரலாற்றுச் சான்றுகளாக செம்பு மற்றும் தங்க நாணயங்கள்- நாணயங்கள் அச்சடித்தல்- மணி உருவாக்கும் தொழிற்சாலைகள் - கல்மணிகள் ,கண்ணாடிமணிகள் - சுடுமண் மணிகள் - சங்கு மணிகள் - எலும்புத் துண்டுகள் - தொல்லியல் சான்றுகள் - சிலப்பதிகாரத்தில் மணிகளின் வகைகள்.								[3]
வேளாண்மை மற்றும் நீர்பாசனத் தொழில் நுட்பம்: அணை, ஏரி, குளங்கள், மதகு - சோழர்காலக் குழுமித் தூம்பின் முக்கியத்துவம்-கால்நடை பராமரிப்பு - கால்நடைகளுக்கான வடிவமைக்கப்பட்ட கிணறுகள் - வேளாண்மை மற்றும் வேளாண்மை 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 மின்பதிப்புசெய்தல் - 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.	கணித்தமிழ் - முனைவர் இல. சுந்தரம். (விகடன் பிரசுரம்).							
3.	கீழடி - வைகை நதிக்கரையில் சங்ககால நகர நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
4.	பொருளை - ஆற்றங்கரை நாகரீகம் (தொல்லியல் துறை வெளியீடு).							
5.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL - (in print).							
6.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies).							
7.	Historical Heritage of the Tamils (Dr.S.V.Subaramanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).							
8.	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)							
9.	Keeladi - 'Sangam City Civilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)							
10.	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author).							
11.	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu).							
12.	Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) - Reference Book.							

*SDG 4 – Quality Education

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026								
Common to ALL Branches								
26EE2C1L – Makerspace								
Semester	Hours/Week			Total Hrs	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	0	0	2	30	1	60	40	100
<p>List of Experiments:</p> <ol style="list-style-type: none"> Cutting and Engraving wood in different shapes Fabrication of simple components / parts using 3D Printers Cutting and Engraving acrylic sheets in different shapes Fabrication of shapes in sheet metal Joining of similar metal pieces using welding Wiring circuits for 2BHK residential concealed conduit wiring PCB layout design of a given circuit. Soldering and testing of given electronic circuit. Integration of Sensors and actuators with a microcontroller. Study experiment: Plumbing, Dis-assembly and assembly of some appliances: Air – Conditioners and Refrigerators. 								
Lab Manual								
1.	<ol style="list-style-type: none"> Stephen Christena, Learn to Weld: Beginning MIG Welding and Metal Fabrication Basics, Crestline Books, 2014. H. Lipson, Fabricated - The New World of 3D Printing, Wiley, 1st edition, 2013. Code of Practice for Electrical Wiring Installations (IS 732:2019) 							
*SDG 9 – Industry Innovation and Infrastructure								

Passed in BoS Meeting held on 17.12.2025
Approved in Academic Council Meeting held on 03.01.2026

K.S.Rangasamy College of Technology – Autonomous R2026								
26IT2C1L – Problem Solving using Python Laboratory								
Semester	Hours/Week			Total Hrs	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	0	0	3	45	1	60	40	100

List of Experiments:

1. Implement the basic concepts of Python
2. Implement List, Tuples, Dictionary, and String
3. Implement the concept of decision-making statements.
4. Implement the concept of looping statements.
5. Working with functions and modules
6. Implement File operations
7. Build a program with Exception handling*
8. Perform various NumPy operations and special functions
9. Design windows using Tkinter
10. Draw shapes and images using Turtle

*SDG 4 – Quality Education

Course Designer(s)

1. Dr.C,Nallusamy (nallusamyc@ksrct.ac.in)
2. Mr.R.T.Dineshkumar(dineshkumarr@ksrct.ac.in)

K.S.Rangasamy College of Technology – Autonomous R 2026								
Mechanical Engineering								
26ME201L –Innovation for Engineering and Technology Laboratory								
Semester	Hours/Week			Total Hrs	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	0	0	2	30	1	60	40	100
Innovation and Design Thinking Concept of innovation and entrepreneurship – Importance of innovation in engineering and society – Overview of Design Thinking – Stages of Design Thinking: Empathize, Define, Ideate, Prototype, Test – Case studies of successful innovations.								[6]
Problem Identification and User Analysis Identification of societal, technological, and market problems – Stakeholder mapping – User persona development – Customer discovery methods: interviews and surveys – Problem framing techniques: 5 Whys method, Need statement.								[6]
Idea Generation and Concept Development Brainstorming and ideation techniques – Creative thinking tools: SCAMPER, Mind Mapping – Concept selection and evaluation methods – Value proposition design.								[6]
Prototyping and Business Model Development Types of prototypes: low-fidelity and high-fidelity – Rapid prototyping tools and techniques – Introduction to Business Model Canvas – Cost analysis and feasibility study.								[6]
Validation, Communication, and Pitching Testing and validation of prototypes – Iterative design and feedback incorporation – Preparation of technical reports and documentation – Pitching innovation ideas – Teamwork and collaboration.								[6]
Total Hours:								30
Reference(s):								
1.	Design Thinking: A Guide to Creative Problem Solving for Everyone – Andrew Pressman, 2018							
2.	Innovation and Design Thinking: A Strategic Guide – Jyoti Ainapur & Ashwin Kumar, 2025.							

SDG 9 – Industry Innovation and Infrastructure

Course Designer(s)

1. Mr.D.Dhanasekaran – ghanasekarand@ksrct.ac.in
2. Mr.S.Jayamani- jayamani@ksrct.ac.in

K.S.Rangasamy College of Technology – Autonomous R2026								
Common to All Branches								
26 TP 2G1P - Career Skill Development II - Aptitude 2								
Semester	Hours/Week			Total Hrs	Credit	Maximum Marks		
	L	T	P			C	CA	ES
II	0	0	2	25	0	100	00	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								[5]
Quantitative Aptitude - Part – 4 Permutation and Combination - Probability - Quadratic equation - Geometry Elementary statistics – Clock – Calendar – Logarithmic								[5]
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								[5]
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.								[5]
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								[5]
Total Hours								25
Reference(s):								
1.	Aggarwal, R.S. ' <i>A Modern Approach to Verbal and Non-verbal Reasoning</i> ', Revised Edition 2008, Reprint 2009, S.Chand & Co Ltd., New Delhi.							
2.	Abhijit Guha, ' <i>Quantitative Aptitude</i> ', McGraw Hill Education, 6 th edition, 2016							
3.	Dinesh Khattar, ' <i>Quantitative Aptitude For Competitive Examinations</i> ', Pearson Education (2020)							
4.	Anne Thomson, ' <i>Critical Reasoning: A Practical Introduction</i> ' Lexicon Books, 3 rd edition, 2022. Warsaw							

Course Designer

- 1.R. Poovarasan - poovarasan@ksrct.ac.in
2.G. Damotharan - damotharan@ksrct.ac.in