Course Descriptions

1 Information Age Ethics

Module Information

Module Title	Information Age Ethics		
Module Delivery	☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	Basic	**Module Code**	CSTE1202
ECTS Credits	4.00	**SWL (hr/sem)**	100 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Asst. Lect. Mamoon Salam Flayyih	**e-mail**	-
Module Leader's Acad. Title	Asst. Lecturer	**Module Leader's Qualification**	MSc
Module Tutor	-	**e-mail**	-
Peer Reviewer Name	-	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Introduce students to the ethical and legal frameworks related to computing and the use of modern technology. Understand privacy and data-protection issues in digital space and networks. Study intellectual property, copyright, cybercrime, and the social responsibility of engineers and developers.
Learning Outcomes **Learning Outcomes**	Ability to analyze ethical problems related to information technology and artificial intelligence. Grasp digital laws, regulations, and intellectual property protecting software and digital content. Apply professional ethical conduct rules in the workplace and system design.
Indicative Contents **Indicative Contents**	Introduction to digital ethics - privacy and data protection - intellectual property and copyright - cybercrime and legal liability - AI and automation ethics - social responsibility and technological impact.

Learning and Teaching Strategies

Theoretical lectures - Case studies - Discussion panels and debates - Individual assignments and research.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	50	4
Unstructured SWL	50	3
Total SWL	100 hours/semester	7 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment (Quizzes & Assignments)	4	20%	Weeks 4, 8, 10, 12
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction to ethics, technology, and digital society
Week 2	Ethical frameworks and theories and their application in IT
Week 3	Digital privacy and personal data protection
Week 4	Data-protection legislation and cyber laws
Week 5	Intellectual property: copyright and software protection
Week 6	Patents, trademarks, and open-source software
Week 7	Midterm Exam
Week 8	Cybercrime, cyberattacks, and ethical dimensions
Week 9	Information security ethics and digital espionage
Week 10	Professional responsibility and codes of ethical conduct for engineers
Week 11	Social-media platform ethics and social impact
Week 12	AI and automation ethics, and algorithmic bias
Week 13	The digital divide and technology's impact on the job market
Week 14	Real case studies and discussion of contemporary ethical issues
Week 15	Presentations and course review
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: **▪ Ethics for the Information Age - Michael J. Quinn.** **▪ Cyberethics: Morality and Law in Cyberspace - Richard Spinello.**	No

2 Digital Logic Design

Module Information

Module Title	Digital Logic Design		
Module Delivery	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	Basic	**Module Code**	CSTE1201
ECTS Credits	6.00	**SWL (hr/sem)**	150 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Asst. Lect. Zaid Omar Abdulazeez	**e-mail**	-
Module Leader's Acad. Title	Asst. Lecturer	**Module Leader's Qualification**	MSc
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Equip students with concepts of number systems, conversions, and digital codes. Understand Boolean algebra, logic-function simplification rules, and the design of combinational and sequential circuits. Integrated Circuits
Learning Outcomes **Learning Outcomes**	Convert between number systems and perform digital arithmetic operations. K-Maps Design and analyze combinational and sequential logic circuits.
Indicative Contents **Indicative Contents**	Number systems and codes - logic gates and Boolean algebra - Karnaugh maps for simplification - combinational circuits - flip-flops, counters, and shift registers.

Learning and Teaching Strategies

Interactive lectures - practical/lab work - engineering problem-solving exercises - digital simulation software (e.g. Logisim/Proteus).

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	75	5
Unstructured SWL	75	5
Total SWL	150 hours/semester	10 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Number systems and conversions between them
Week 2	Digital codes (BCD, Gray Code) and binary arithmetic
Week 3	AND, OR, NOT, NAND, NOR, XOR, XNOR
Week 4	Boolean algebra, theorems, and De Morgan's laws
Week 5	K-Map 2 & 3 Variables
Week 6	Don't Care
Week 7	Midterm Exam
Week 8	Half & Full Adders/Subtractors
Week 9	Encoders and Decoders
Week 10	Multiplexers and Demultiplexers
Week 11	SR and D Flip-Flops
Week 12	Advanced flip-flops (JK and T) and timing signals
Week 13	Asynchronous & Synchronous Counters
Week 14	Shift registers and their types
Week 15	Practical applications, integrated circuit design, and comprehensive review
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: **▪ Digital Design - M. Morris Mano & Michael D. Ciletti.** **▪ Digital Fundamentals - Thomas L. Floyd.**	No

3 Mathematics II

Module Information

Module Title	Mathematics 2		
Module Delivery	☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar		
Module Type	Basic	**Module Code**	CSTE1204
ECTS Credits	5.00	**SWL (hr/sem)**	125 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Asst. Lect. Marwan Mohammed Alwan	**e-mail**	-
Module Leader's Acad. Title	-	**Module Leader's Qualification**	-
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	Mathematics 1	1
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Deepen students' understanding of advanced integration techniques and their engineering applications. Study analytic geometry, vectors, multivariable functions, and partial derivatives. Introduce double integrals, infinite series, and ordinary differential equations.
Learning Outcomes **Learning Outcomes**	Apply various integration methods to solve complex mathematical problems and compute areas and volumes. Work with vectors in 3D space and compute partial derivatives and double integrals. Analyze series, test convergence/divergence, and solve simple differential equations.
Indicative Contents **Indicative Contents**	Advanced integration techniques - vectors in space - multivariable functions and partial derivatives - double integrals - series and numerical sequences - first-order differential equations.

Learning and Teaching Strategies

Theoretical lectures - Tutorials - weekly homework - quizzes and engineering applications.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	62.5	4
Unstructured SWL	62.5	4
Total SWL	125 hours/semester	8 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Integration by Parts
Week 2	Partial Fractions
Week 3	Improper integrals and applications of integration
Week 4	Vectors in 3D Space
Week 5	Dot product and cross product and their applications
Week 6	Partial Derivatives
Week 7	Midterm Exam
Week 8	Gradient
Week 9	Local Extrema and Lagrange Multipliers
Week 10	Double integrals and computing areas and volumes
Week 11	Polar Coordinates
Week 12	Infinite Sequences and Series
Week 13	Convergence Tests
Week 14	Taylor & Maclaurin Series
Week 15	First-Order ODEs
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: **▪ Thomas' Calculus - George B. Thomas, Joel Hass, Christopher Heil.** **▪ Calculus: Early Transcendentals - James Stewart.**	No

4 General Physics

Module Information

Module Title	General Physics		
Module Delivery	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	Basic	**Module Code**	CSTE1203
ECTS Credits	5.00	**SWL (hr/sem)**	125 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Lect. Dr. Mohammed Ayad Saad	**e-mail**	-
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PhD
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Introduce the fundamental principles of classical mechanics, electricity, and magnetism. Understand physical concepts related to motion, work, energy, and electromagnetic fields. Equip students with skills to conduct physics experiments, analyze data, and verify laws experimentally.
Learning Outcomes **Learning Outcomes**	Understand and apply Newton's laws and the conservation of energy and momentum. Analyze DC circuits and Coulomb's and Kirchhoff's laws and magnetic fields. Relate physical phenomena to IT applications and semiconductors.
Indicative Contents **Indicative Contents**	Mechanics and motion - work and energy - charge and electric field - potential and capacitors - current, resistance, and DC circuits - magnetism and induction - introduction to semiconductors.

Learning and Teaching Strategies

Theoretical lectures - practical lab experiments - physics problem-solving - interactive demonstrations and simulations.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	62.5	4
Unstructured SWL	62.5	4
Total SWL	125 hours/semester	8 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Physical measurements, units, and vectors in physics
Week 2	Motion in two dimensions and Newton's laws of motion
Week 3	Work, kinetic energy, and conservation of mechanical energy
Week 4	Linear momentum and collisions
Week 5	Electric charge and Coulomb's law of the electric field
Week 6	Electric field and electric flux
Week 7	Midterm Exam
Week 8	Electric potential and electric potential energy
Week 9	Capacitors, dielectric materials, and capacitor combinations
Week 10	Electric current, resistance, and Ohm's law
Week 11	DC circuits and Kirchhoff's laws
Week 12	Magnetic field and magnetic force on charges and currents
Week 13	Electromagnetic induction, Faraday's law, and Lenz's law
Week 14	Electromagnetic waves and basic properties of light
Week 15	Introduction to semiconductor physics and technical applications
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: ▪ **Physics for Scientists and Engineers - Raymond A. Serway & John W. Jewett.** ▪ **Fundamentals of Physics - David Halliday, Robert Resnick, Jearl Walker.**	No

5 English Language I

Module Information

Module Title	English Language 1		
Module Delivery	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar		
Module Type	General / University Requirement	**Module Code**	HUC-1002
ECTS Credits	2.00	**SWL (hr/sem)**	50 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Asst. Lect. Ahmed Khaled	**e-mail**	-
Module Leader's Acad. Title	-	**Module Leader's Qualification**	-
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Develop the four English-language skills at the intermediate level. Equip students with academic and technical vocabulary used in technology and computing. Strengthen students' ability to write academic paragraphs and communicate effectively, orally and in writing.
Learning Outcomes **Learning Outcomes**	Understand and read technical and academic texts and extract main ideas. Compose paragraphs and formal letters in English proficiently and grammatically. Speak and present orally with confidence and hold academic and professional conversations.
Indicative Contents **Indicative Contents**	Basic grammar and tenses - academic and technical vocabulary - reading comprehension skills - paragraph writing and expression - everyday and professional communication.

Learning and Teaching Strategies

Interactive teaching - pair/group work - presentations - in-class listening and speaking exercises.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	25	2
Unstructured SWL	25	1
Total SWL	50 hours/semester	3 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Grammar: Present Simple vs. Present Continuous
Week 2	Academic Vocabulary & IT Concepts Foundations
Week 3	Reading Strategies: Skimming & Scanning Technical Texts
Week 4	Grammar: Past Simple vs. Past Continuous
Week 5	Writing Skills: Sentence Structure and Punctuation
Week 6	Listening Skills: Note-taking in Academic Lectures
Week 7	Midterm Exam
Week 8	Speaking Skills: Introductions, Expressing Opinions & Discussion
Week 9	Grammar: Present Perfect & Future Tenses (will / going to)
Week 10	Academic Paragraph Writing: Topic Sentences & Supporting Details
Week 11	Technical Terminology for Computer Systems & Software
Week 12	Reading Comprehension: Analyzing Scientific & Technical Articles
Week 13	Professional Communication: Writing Emails and Formal Letters
Week 14	Presentation Skills: Preparing and Delivering Short Talks
Week 15	Final Revision and Practice Presentations
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: ▪ **New Headway (Intermediate Student's Book) - John and Liz Soars.** ▪ **Oxford English for Information Technology - Eric H. Glendinning & John McEwan.**	No

6 Arabic Language I

Module Information

Module Title	Arabic Language		
Module Delivery	☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	General / University Requirement	**Module Code**	HUC-1001
ECTS Credits	2.00	**SWL (hr/sem)**	50 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Lect. Dr. Basim Raheem	**e-mail**	-
Module Leader's Acad. Title	-	**Module Leader's Qualification**	-
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Master Arabic grammar and spelling rules and avoid common errors. Develop academic writing skills, report and formal-letter writing, and sound expression. Appreciate literary texts and strengthen rhetoric and recitation skills in Standard Arabic.
Learning Outcomes **Learning Outcomes**	Grasp basic grammar and spelling rules and apply them in academic writing. Compose formal correspondence and scientific reports in sound, error-free language. Analyze texts and read them aloud correctly, observing punctuation.
Indicative Contents **Indicative Contents**	Parts of speech and basic sentences - governing particles and grammatical case markers - spelling rules and hamza forms - punctuation and common errors - report and CV writing - selected literary texts.

Learning and Teaching Strategies

Theoretical lectures - spelling and grammar exercises - text editing and linguistic critique - individual recitation and speaking.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	25	2
Unstructured SWL	25	1
Total SWL	50 hours/semester	3 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Parts of speech: noun, verb, particle, and the markers of each
Week 2	The nominal sentence: subject, predicate, and their governing particles
Week 3	The verbal sentence: subject, passive subject, and objects
Week 4	Rules of declension and construction, and primary and secondary case markers
Week 5	Spelling rules (1): writing hamza at the start of a word
Week 6	Spelling rules (2): medial/final hamza and the soft alif
Week 7	Midterm Exam
Week 8	Punctuation marks and their importance in conveying meaning
Week 9	Common linguistic and grammatical errors in contemporary writing
Week 10	Written expression and academic writing skills
Week 11	Writing formal letters, CVs, and reports
Week 12	Summarizing and extracting main ideas from texts
Week 13	Selected literary texts
Week 14	Rhetoric, recitation, and speaking skills in Standard Arabic
Week 15	Comprehensive exercises and review of language applications
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: **▪ Jami' al-Durus al-'Arabiyyah - Mustafa al-Ghalayini.** **▪ Al-Tatbiq al-Nahwi - Dr. Abdo al-Rajihi.**	No

7 Introduction to Information Systems

Module Information

Module Title	Introduction to Information Systems		
Module Delivery	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	Basic	**Module Code**	CSTE1101
ECTS Credits	6.00	**SWL (hr/sem)**	150 hours/semester
Module Level	1	**Semester of Delivery**	First (1)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Asst. Lect. Mamoon Salam Flayyih	**e-mail**	-
Module Leader's Acad. Title	Asst. Lecturer	**Module Leader's Qualification**	MSc
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Introduce students to the basic concepts of information systems, their components, and their role in modern organizations. Understand IT infrastructure. Review types of enterprise systems (ERP, CRM, TPS) and the stages of the systems development life cycle (SDLC).
Learning Outcomes **Learning Outcomes**	Distinguish between data, information, and knowledge, and understand how an information system works. Understand the role of information systems in supporting decision-making and achieving competitive advantage. Know the system development life cycle and digital security in the business environment.
Indicative Contents **Indicative Contents**	Information systems concepts - IT infrastructure - databases and networks - business systems and e-commerce - system development life cycle (SDLC) - information systems security and current trends.

Learning and Teaching Strategies

Interactive lectures - practical/lab training on applications and software - business case studies - group assignments.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	75	5
Unstructured SWL	75	5
Total SWL	150 hours/semester	10 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Basic concepts: data, information, knowledge, and system
Week 2	Hardware, Software, Data, People, Processes
Week 3	Types of information systems (TPS, MIS, DSS, ESS) and their tactical and strategic roles
Week 4	Hardware infrastructure and modern technologies
Week 5	Software, operating systems, and application software
Week 6	DBMS
Week 7	Midterm Exam
Week 8	Cloud Computing
Week 9	E-Business & E-Commerce
Week 10	Information systems security, data confidentiality, and digital threats
Week 11	Systems Development Life Cycle - SDLC
Week 12	Systems Analysis & Design
Week 13	Integrated enterprise systems: ERP and CRM
Week 14	Business Intelligence - BI
Week 15	Current trends in information systems and comprehensive course review
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: **▪ Management Information Systems: Managing the Digital Firm - Kenneth C. Laudon & Jane P. Laudon.** **▪ Introduction to Information Systems - R. Kelly Rainer & Brad Prince.**	No

8 Engineering Workshops

Module Information

Module Title	Engineering Workshops		
Module Delivery	☐ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	Basic	**Module Code**	MIET1205
ECTS Credits	6.00	**SWL (hr/sem)**	150 hours/semester
Module Level	1	**Semester of Delivery**	Second (2)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Lect. Dr. Mohammed Ayad Saad	**e-mail**	-
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PhD
Module Tutor	-	**e-mail**	-
Peer Reviewer Name	-	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Introduce students to the basics and general principles of working in engineering workshops and their practical applications. Train students to use various measuring, manufacturing, and machining tools and equipment safely and accurately. Instill occupational safety procedures when handling engineering machines and equipment.
Learning Outcomes **Learning Outcomes**	Know the basic rules of occupational safety and health in workshops and apply them practically. Ability to handle carpentry, blacksmithing, plumbing, and welding equipment and various measuring tools. Master the execution of simple engineering projects and parts according to specified drawings and measurements.
Indicative Contents **Indicative Contents**	General safety guidelines in engineering workshops. Measuring, marking, grinding, and finishing tools. Welding, carpentry, turning, and blacksmithing workshops and their applications.

Learning and Teaching Strategies

Hands-on training and practice in workshops - demonstrations - individual and group exercises - workshop reports and field experimentation - practical and theoretical exams.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	75	5
Unstructured SWL	75	5
Total SWL	150 hours/semester	10 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment (Quizzes & Practical Reports)	4	20%	4, 8, 10, 12
Summative Assessment (Midterm Practical Exam)	2 hr	20%	7
Summative Assessment (Final Practical/Theory Exam)	2 hr	60%	16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	General Safety Guidelines & Workshop Rules
Week 2	Measuring Tools & Layout Tools
Week 3	Bench Work & Hand Tools (Part 1)
Week 4	Bench Work & Filing Techniques (Part 2)
Week 5	Carpentry Shop: Tools & Wood Joint Types
Week 6	Carpentry Practical Work
Week 7	Midterm Practical Exam
Week 8	Forging & Sheet Metal Work
Week 9	Welding Shop: Arc Welding Basics
Week 10	Welding Techniques & Safety
Week 11	Turning & Machining Shop (Lathe Machine)
Week 12	Milling & Drilling Operations
Week 13	Foundry & Casting Processes
Week 14	Electrical & Wiring Basics Workshop
Week 15	Practical Project Assembly & Evaluation
Week 16	Final Exam

Learning and Teaching Resources

Resource	In Library?
Required Texts: **▪ Workshop Technology (Part 1 & 2) - W.A.J. Chapman.** **▪ Manufacturing Technology: Materials, Processes, and Equipment - Helmi A. Youssef.**	No

9 Mathematics I

Module Information

Module Title	MATHEMATICS		
Module Delivery	☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☒ Seminar		
Module Type	Core	**Module Code**	BCYSCE100-S1
ECTS Credits	5.00	**SWL (hr/sem)**	125 hours/semester
Module Level	1	**Semester of Delivery**	First (1)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Asst. Lect. Marwan Mohammed Alwan	**e-mail**	-
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	MSc
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	▪ Equip students with basic concepts of calculus and mathematical functions and their engineering applications. ▪ Understand properties of complex functions, limits, continuity, and derivatives and their applications in engineering and cybersecurity. ▪ Develop analytical thinking and advanced mathematical problem-solving skills using differential techniques.
Learning Outcomes **Learning Outcomes**	▪ Understand and analyze various functions and compute their limits and continuity. ▪ Compute derivatives and apply them to find extrema, curve sketching, and related rates. ▪ Grasp basic concepts of definite and indefinite integrals and their computational applications.
Indicative Contents **Indicative Contents**	Functions, limits, and continuity - differentiation rules - applications of derivatives - exponential, logarithmic, trigonometric functions and their inverses - introduction to integration and its basic rules.

Learning and Teaching Strategies

Theoretical lectures - Tutorials - practical/lab work - seminars, interactive activities, and homework.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	62.5	4
Unstructured SWL	62.5	4
Total SWL	125 hours/semester	8 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment	-	20%	Continuous
Midterm Exam	2 hr	30%	Week 7
Final Exam	2 hr	50%	Week 16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Real Numbers, Inequalities & Absolute Value
Week 2	Functions and their types, and graphical representation of functions
Week 3	Limits of functions, their properties, and methods for computing them
Week 4	Continuity
Week 5	Introduction to derivatives and the concept of rate of change
Week 6	Trigonometric Functions
Week 7	Midterm Exam
Week 8	The chain rule and implicit differentiation
Week 9	Related Rates
Week 10	Applications of derivatives: extrema and the mean value theorem
Week 11	Concavity & Curve Sketching
Week 12	Exponential and logarithmic functions and their derivatives
Week 13	Inverse Trig & Hyperbolic Functions
Week 14	Introduction to indefinite integrals and basic integration rules
Week 15	Definite integrals, the fundamental theorem of calculus, and comprehensive review
Week 16	Final Exam

Learning Resources

Resource	In Library?
Required Texts: **▪ Thomas' Calculus - George B. Thomas, Joel Hass, Christopher Heil.** **▪ Calculus: Early Transcendentals - James Stewart.**	No

10 Engineering Drawing

Module Information

Module Title	Engineering Drawing		
Module Delivery	☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	B	**Module Code**	-
ECTS Credits	5.00	**SWL (hr/sem)**	125 hours/semester
Module Level	-	**Semester of Delivery**	First (1)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Lect. Dr. Mohammed Ayad Saad	**e-mail**	-
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Dr.
Module Tutor	-	**e-mail**	-
Peer Reviewer Name	-	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details	Semester
Prerequisite module	None	----
Co-requisites module	None	----

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Equip students with basic skills in engineering drawing and visual engineering expression. Train students to use engineering drawing tools and understand layout and projection rules. Enable students to read and understand engineering drawings and their technical applications.
Learning Outcomes **Learning Outcomes**	Understand basic concepts of engineering drawing and standard symbols. Ability to project geometric shapes and draw various views. Acquire manual and lab drawing skills with proficiency and precision.
Indicative Contents **Indicative Contents**	Principles of engineering drawing and the tools used. Orthographic projection and the three views. Assembly drawing, sectional drawing, and lab applications.

Learning and Teaching Strategies

Lectures - lab sessions - formal exercises and assignments - practical and theoretical exams - attendance and participation.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	62.5	4
Unstructured SWL	62.5	4
Total SWL	125 hours/semester	8 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due
Formative Assessment (Quizzes & Lab Reports)	4	20%	4, 8, 10, 12
Summative Assessment (Midterm Exam)	2 hr	20%	7
Summative Assessment (Final Exam)	2 hr	60%	16
Total Assessment	-	100%	-

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction to Engineering Drawing & Tools
Week 2	Lettering and Dimensioning Practice
Week 3	Geometric Constructions
Week 4	Theory of Orthographic Projection
Week 5	Drawing Multi-view Projections (Part 1)
Week 6	Drawing Multi-view Projections (Part 2)
Week 7	Midterm Exam
Week 8	Pictorial Drawings - Isometric Projection
Week 9	Sectional Views Concepts
Week 10	Full and Half Sections
Week 11	Engineering Curves & Tangents
Week 12	CAD Applications / Lab intro
Week 13	Practical Exercises in Lab
Week 14	Assembly & Working Drawings
Week 15	Course Review & Practical Assessment
Week 16	Final Exam

Learning and Teaching Resources

Resource	In Library?
Required Texts: **▪ Engineering Drawing and Graphic Technology - Thomas E. French.** **▪ Technical Drawing with Engineering Graphics - Frederick E. Giesecke.**	No

11 Fundamentals of Electrical Engineering

Module Information

Module Title	Fundamentals of Electrical Engineering		
Module Delivery	☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☒ Practical ☒ Seminar		
Module Type	Core	**Module Code**	BCYSCE104-S1
ECTS Credits	6.00	**SWL (hr/sem)**	150 hours/semester
Module Level	1	**Semester of Delivery**	First (1)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Lect. Dr. Mohammed Ayad Saad	**e-mail**	-
Module Leader's Acad. Title	Dr.	**Module Leader's Qualification**	Ph.D
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details
Prerequisite module	None
Co-requisites module	None

Module Aims, Learning Outcomes and Indicative Contents

Module Aims

Introduce the fundamental concepts of electrical circuits, current, voltage, and power.
Understand basic circuit laws including Ohm's Law, Kirchhoff's Voltage Law (KVL), and Kirchhoff's Current Law (KCL).
Master techniques for analyzing DC circuits (Nodal Analysis, Mesh Analysis, Thevenin and Norton Theorems).
Familiarize students with AC circuit analysis, phasors, impedance, and power in AC systems.

Learning Outcomes

Apply basic circuit laws and network theorems to analyze DC and AC circuits.
Calculate current, voltage, power, and energy in basic electrical components.
Use laboratory instruments to measure electrical quantities safely and accurately.
Analyze linear circuits using nodal and mesh techniques.

Indicative Contents

Basic Electrical Concepts (Charge, Current, Voltage, Power, Energy).
Resistive Circuits: Series, Parallel, and Star-Delta Transformations.
Circuit Analysis Techniques: Nodal Analysis and Mesh Analysis.
Network Theorems: Superposition, Thevenin's, Norton's, and Maximum Power Transfer.
Capacitors and Inductors in DC and AC circuits.
Single-Phase AC Circuits and Phasor Diagrams.

Learning and Teaching Strategies

- Strategies:
- Interactive lectures and visual presentation of theoretical principles.
- Practical laboratory experiments to verify theoretical circuit analysis.

- Problem-solving sessions and weekly tutorials.
- Group assignments and seminars on circuit applications.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	75	5
Unstructured SWL	75	5
Total SWL	150 hours/semester	10 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment (Quizzes)	4	10%	2, 4, 6, 8	LO #1, #2
Formative Assessment (Practical/Lab Reports)	8	15%	3, 5, 7, 9, 11, 12, 13, 14	LO #3
Formative Assessment (Seminar/Assignments)	2	5%	5, 10	LO #1, #4
Summative Assessment (Midterm Exam)	2 hr	20%	7	LO #1 - #3
Summative Assessment (Final Exam)	3 hr	50%	16	All LOs
Total Assessment	100%			

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction to Electrical Engineering: Units, Charge, Current, Voltage, Power and Energy.
Week 2	Ohm's Law, Nodes, Branches, Loops, and Kirchhoff's Laws (KVL & KCL).
Week 3	Series and Parallel Resistive Circuits, Voltage and Current Divider Rules.
Week 4	Delta-Wye (Star-Delta) Transformations and Circuit Simplification.
Week 5	Nodal Analysis Technique for Circuit Solving.
Week 6	Mesh Analysis Technique for Circuit Solving.
Week 7	Midterm Examination
Week 8	Superposition Theorem and Applications.
Week 9	Thévenin's and Norton's Theorems.
Week 10	Maximum Power Transfer Theorem.
Week 11	Capacitors and Inductors: Physical properties, energy storage, series and parallel combinations.
Week 12	Sinusoidal Waveforms, Frequency, Phase Angle, RMS Value.
Week 13	Phasors and Complex Impedance in AC Circuits.
Week 14	AC Circuit Analysis: RLC Circuits and Resonance.
Week 15	Comprehensive Review and Lab Project Evaluations
Week 16	Final Exam

Learning and Teaching Resources

Resource	In Library?
Required Texts: Fundamentals of Electric Circuits - Charles K. Alexander & Matthew N. O. Sadiku.	No
Recommended Texts: Engineering Circuit Analysis - William H. Hayt & Jack E. Kemmerly.	No

12 Fundamentals of Programming

Module Information

Module Title	Fundamentals of Programming		
Module Delivery	☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☒ Seminar		
Module Type	Core	**Module Code**	-
ECTS Credits	6.00	**SWL (hr/sem)**	150 hours/semester
Module Level	1	**Semester of Delivery**	First (1)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Prof. Dr. Omer K. Jasim	**e-mail**	-
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PhD
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Relation with Other Modules

Type	Details
Prerequisite module	Object Oriented Programming (BCYSCE107-S2) - Semester 2
Co-requisites module	None

Module Aims, Learning Outcomes and Indicative Contents

Module Aims

Provide students with basic programming concepts and logical problem-solving.
Understand the structure of modern programming languages, data types, variables, and arithmetic/logical operations.
Enable students to use conditional control structures, loops, and build functions and arrays.
Develop algorithm-design skills, code writing, and debugging.

Learning Outcomes

Data Types
Flowcharts
Use conditional statements and loops effectively.
Build and use functions and arrays, and trace program errors.

Indicative Contents

Introduction to Programming Concepts and Logic.
Variables, Data Types, and Operators.
Control Structures: Selection Statements (If/Else, Switch).
Iteration and Loops (For, While, Do-While).
Functions and Scope of Variables.
Arrays and String Manipulation.

Learning and Teaching Strategies

- Strategies:
- Theoretical lectures and presentations to clarify basic concepts.
- Practical work in computer labs to write and test code.

- Individual programming assignments and exercises to develop problem-solving skills.
- Small programming projects and group discussions.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	75	5
Unstructured SWL	75	5
Total SWL	150 hours/semester	10 hours/week

Module Evaluation

Evaluation Category	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment (Quizzes)	4	10%	2, 4, 6, 8	LO #1, #2
Formative Assessment (Assignments/Practical)	8	15%	3, 5, 7, 9, 11, 12, 13, 14	LO #2, #3, #4
Formative Assessment (Reports/Projects)	1	5%	10	LO #3, #4
Summative Assessment (Midterm Exam)	2 hr	20%	7	LO #1 - #3
Summative Assessment (Final Exam)	3 hr	50%	16	All LOs
Total Assessment	100%			

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction to Programming, Problem Solving Concepts, Algorithms and Flowcharts.
Week 2	Basic Syntax, Structure of C++/Programming Language, Variables, Data Types.
Week 3	Input/Output Operations, Arithmetic Operators, Expression Evaluation.
Week 4	Relational and Logical Operators, Decision Making: If, If-Else Statements.
Week 5	Nested If Statements, Switch Case Statement with Practical Applications.
Week 6	Introduction to Repetition Control Structures: While Loop.
Week 7	Midterm Examination
Week 8	Do-While Loop, For Loop and Comparison between Loop Types.
Week 9	Nested Loops, Break and Continue Control Statements.
Week 10	Introduction to Functions, User-defined Functions, Function Declaration and Definition.
Week 11	Function Parameters, Passing Arguments by Value and by Reference.
Week 12	Introduction to Arrays: 1D Array Declaration, Initialization, and Accessing Elements.
Week 13	Array Operations (Searching, Sorting, Traversal).
Week 14	Two-Dimensional Arrays (2D Arrays) and Applications.
Week 15	Comprehensive Review and Practical Project Discussion
Week 16	Final Exam

Learning and Teaching Resources

Resource	In Library?
Required Texts: C++ How to Program (10th Edition) - Paul Deitel & Harvey Deitel.	No
Recommended Texts: Starting Out with C++ from Control Structures to Objects - Tony Gaddis.	No

13 Democracy and Human Rights

Module Information

Module Title	Human Rights and Democracy		
Module Delivery	☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Type	S	**Module Code**	-
ECTS Credits	2.00	**SWL (hr/sem)**	50 hours/semester
Module Level	2	**Semester of Delivery**	First (1)
Administering Department	CYSCE		
College	AL-Huda University College - TECM		
Module Leader	Lect. Dr. Khamis Hammad	**e-mail**	-
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ms.c in Public Law
Module Tutor	None	**e-mail**	-
Peer Reviewer Name	None	**e-mail**	-
Scientific Committee Approval Date	-	**Version Number**	1.0

Module Aims, Learning Outcomes and Indicative Contents

Module Aims **Module Aims**	Increase students' knowledge of the conceptual and historical development of human rights and democracy. Develop students' analytical and critical skills regarding the reality and future of human rights and democracy. Train students on the importance of active participation in public life, reinforcing respect for human-rights principles and active engagement in political and cultural life. Enable students to understand the importance of education in spreading a culture of human rights and democracy in building a civilized society based on good governance, whose key pillars are belief in human rights, education about them, and active participation in governance through free and fair elections.
Learning Outcomes **Learning Outcomes**	Understands the meaning of human rights and their forms. Knows international human rights charters and covenants. Knows the concept of freedoms and their classification. Understands the main principles and applications of democratic systems.
Indicative Contents **Indicative Contents**	Deals with human-rights violations. Understands the student's rights and duties toward society. Understands the practice of democratic applications.

- Learning and Teaching Strategies
- Strategies used: daily participation - daily quizzes - term tests - final exams - daily attendance - submitting reports as a semester activity.

Student Workload (SWL)

Workload Category	h/sem	h/w
Structured SWL	25	2
Unstructured SWL	25	1
Total SWL	50 hours/semester	3 hours/week

Module Evaluation

Evaluation Category		Time/Number	Weight (Marks)	Week Due
Formative Assessment Formative Assessment	Quizzes	2	20%	4, 11
	Report	1	10%	-
Summative Assessment Summative Assessment	Midterm Exam	2 hr	20%	7
	Final Exam	2 hr	50%	16
Total Assessment		100%		

Weekly Theoretical Syllabus

Week	Material Covered
Week 1	Human rights: definition and objectives. Human rights in divine religions, focusing on human rights in Islam.
Week 2	Human rights in modern contemporary history. NGOs working in human rights.
Week 3	Human rights in Iraqi constitutions.
Week 4	The relationship between human rights and public freedoms. Economic, social, and political human rights.
Week 5	Modern human rights. Guarantees for respecting and protecting human rights at the national level.
Week 6	The role of regional organizations working in human rights. The general theory of freedoms.
Week 7	The legal basis of the rule of law. Regulation of freedoms by public authority.
Week 8	Democracy: definition and types. Concepts of democracy.
Week 9	Democracy in the third world. Democratic systems in the third world.
Week 10	The concept of freedoms and classification of public freedoms. Basic freedoms; intellectual, economic, and social freedoms.
Week 11	Freedom of security and peace of mind, and freedom of movement. Freedom of education, press, and assembly.
Week 12	Freedom of association and work. Freedom of ownership.
Week 13	Freedom of trade and industry. Women's freedom.
Week 14	Political freedoms and public freedoms.
Week 15	Scientific and technical progress and public freedoms. The future of public freedoms.
Week 16	Final Exam

Learning and Teaching Resources

Resource	In Library?
Required Texts: **Hadi, Riyadh Aziz (2005). Human Rights, Baghdad.** **Al-Dulaimi, Hafez Alwan (2009). A Contemporary Reading of Human Rights.**	No

Grading Scheme

Group	Grade	Grade	Marks (%)	Definition
Success Group (50 - 100)	A	Excellent	90 - 100	Outstanding Performance
	B	Very Good	80 - 89	Above average with some errors
	C	Good	70 - 79	Sound work with notable errors
	D	Average	60 - 69	Fair but with major shortcomings
	E	Pass	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX	Fail	45 - 49	More work required but credit awarded
	F	Fail	0 - 44	Considerable amount of work required