الهيئة الملكية للجبيل وينبع
Royal Commission for Jubail & Yanbu

Yanbu Industrial College

Since 1989

Content

Introduction

Vision

To be the first choice for applied education in the Kingdom of Saudi Arabia.

Mission

To deliver outstanding applied education that prepares graduates for the job market, and to contribute to community development and academic research.

Values

• Excellence in Applied Education – We are dedicated to providing high-quality, applied education that equips skilled professionals to meet the needs of the industrial sector.

• Innovation & Development – We foster creativity and pursue continuous improvement to keep pace with technological and industrial advances.

• Integrity & Responsibility – We adhere to the highest standards of academic ethics and uphold our responsibilities toward society and the environment.

• Empowerment – We support and enable students and faculty to achieve their fullest academic and professional potential.

• Collaboration – We believe in the spirit of teamwork and collaboration among students, faculty, and partners to enhance an exceptional learning environment.

Historical Background

Yanbu Industrial College (YIC) is located in the city of Yanbu Al-Sinaiyah in the Al-Madinah Province. It is approximately a 25-minute drive from Prince Abdul Mohsin Bin Abdul Aziz Airport, the city's international airport. Situated about 350 km north of Jeddah, YIC lies on the coast of the Red Sea—one of the main maritime routes connecting Saudi Arabia, the world's leading oil exporter, to Europe and Africa.

To leverage Yanbu's strategic geographical location and transform it into a modern industrial city, the Kingdom of Saudi Arabia established the Royal Commission for Jubail and Yanbu in 1975. Shortly thereafter, Yanbu became the western terminus for pipelines transporting natural gas and crude oil to global markets. Recognizing the growing need for a highly skilled and technically trained workforce to support this rapidly expanding economic hub, the Royal Commission established Yanbu Industrial College in 1989. Today, Yanbu is home to over 20 major hydrocarbon, petrochemical, and mineral industries. The Saudi workforce educated at YIC has played a vital role in transforming initial industrial investments into a thriving economy, with current investments exceeding $14 billion. In just over two decades, YIC has become a key provider of skilled manpower, significantly contributing to the growth of Yanbu's industrial sector and its impact on national development. YIC maintains strong ties with local industries and professional sectors. At the top of our organizational structure is the Industry Advisory Council, composed of influential economic leaders from various sectors critical to Yanbu Industrial City. This Council plays a central role in evaluating and enhancing our academic programs, ensuring that our curriculum aligns with industry needs. As a result, YIC graduates are in high demand, and the college consistently maintains an excellent student placement rate.

Managing Director Message

Yanbu Industrial College (YIC), since its inception in 1989, has stood as a strong pillar supporting the industrial establishments of the Kingdom of Saudi Arabia—particularly those in and around Yanbu—by providing highly skilled and efficient graduates in chemical, electrical, and mechanical engineering technologies. Today, YIC continues to hold a prominent position in these strategic fields. I sincerely thank Allah for guiding us in achieving our goals thus far, and I pray for His continued support and guidance in our future endeavors.

Over the years, our programs have evolved to incorporate state-of-the-art course content aligned with the needs of our various stakeholders. All of our programs are now accredited by internationally recognized agencies of high repute. As the Managing Director of YIC, I look forward to embracing new challenges and opportunities that will position YIC as a world-renowned institute while fulfilling national goals in line with Vision 2030.

I take this opportunity to congratulate our alumni, who have successfully met and overcome various challenges in their professional environments and continue to strive for even greater achievements. I also extend my congratulations to those who have recently secured admission to YIC, and warmly welcome Saudi youth aspiring to join our institution to pursue their career dreams and contribute meaningfully to Vision 2030.

We remain committed to equipping Saudi youth with the knowledge, technical expertise, and practical skills necessary to face future challenges. At the same time, we aim to instill a deep sense of responsibility for environmental protection. I am proud to be part of such a dedicated team and look forward to solidifying our reputation as one of the leading institutions in the Kingdom, playing a pivotal role in nation-building.

Sincerely,
Managing Director
Yanbu Industrial College

Academic Departments

Chemical Engineering Department

The Department of Chemical Engineering is one of the fundamental engineering fields focused on designing and developing industrial processes that transform raw materials into valuable, useful products. This discipline combines essential sciences, such as physics, chemistry, and mathematics, with engineering skills to design processes and equipment for manufacturing and controlling chemical reactions.

Department Goals

• Graduate Qualified Engineers: Equip students with the skills needed to design, operate, and manage chemical industrial processes across various sectors, such as petrochemicals, pharmaceuticals, food, energy, and the environment.

• Enhance Industrial Efficiency: Apply engineering and chemical principles to improve production processes, increase quality, and reduce costs.

• Focus on Safety and the Environment: Prioritize the design of environmentally friendly processes and ensure safe industrial operations.

Academic Programs

• **Bachelor** of Science in Chemical Engineering
• **Diploma** in Science in Process Operations and Chemical Analysis Technology

Bachelor of Science in Chemical Engineering

Bachelor of Science in Chemical Engineering

Program Description

The Bachelor of Science in Chemical Engineering program aims to equip students with the knowledge and skills necessary for designing and developing chemical and industrial processes. The program focuses on understanding the scientific and mathematical foundations of chemical engineering, covering a range of subjects such as general chemistry, physics, mathematics, and chemical engineering principles. In addition to theoretical courses, the program includes practical laboratory experiences where students learn to use modern equipment and techniques for material analysis and development. Practical skills are further enhanced through industrial training, allowing students to apply their knowledge in real-world work environments. By the end of the program, graduates are qualified for positions in fields such as engineering design, process management, research and development, quality assurance, and environmental safety, preparing them to become innovative engineers capable of making effective contributions to the advancement of the chemical industry.

Program Outcomes

- Provide technical education to chemical engineering students along with communication skills to enable them to occupy positions in industry or related fields.
- Equip chemical engineering students with the technical tools and lifelong learning skills necessary to be prepared for a rapidly changing technological environment.
- Instill essential values, independence, and responsibility in chemical engineering students to ensure they are ready to perform their tasks ethically and professionally.
- Engineers capable of making effective contributions to the advancement of the chemical industry.

Study Plan

Bachelor of Science in Chemical Engineering

1st Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CHEM	101	General Chemistry I	3	3	4		
PHY	101	General Physics I	3	3	4	MA 101	
MA	101	Calculus I	4	0	4		
ESP	101	Introduction to Academic Discourse	3	0	3		
ARB	101	Practical Grammar	2	0	2		
HPE	101	Health and Physical Education	1	0	1		
			16	**6**	**18**		

1st Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
PHY	102	General Physics II	3	3	4	MA 102	PHY 101
MA	102	Calculus II	4	0	4		MA 101
ESP	102	Introduction to Report Writing	3	0	3		ESP 101
ARB	102	Objective Writing	2	0	2		ARB 101
ISL	101	Belief and Its Consequences	2	0	2		
CSE	101	Introduction to Programming	1	3	2		
			15	**6**	**17**		

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	201	Calculus III	3	0	3		MA 102
MA	202	Probability and Statistics for Engineers	3	0	3		MA 102
ESP	201	Academic and Professional Communication	3	0	3		ESP 102
ISL	201	Professional Ethics	2	0	2		ISL 101
CHEM	211	General Chemistry II	3	0	3		CHEM 101
CHEM	212	General Chemistry II Lab	0	3	1	CHEM 211	
CE	201	Principles of Chemical Engineering	3	0	3	CHEM 211	PHY 102
			17	**3**	**18**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	203	Elements of Differential Equations	3	0	3		MA 102
CSE	201	Introduction to Data Science	3	0	3		CSE 101, MA 202
CE	202	Materials Science	3	0	3		CHEM 211
CE	203	Introduction to Chemical Engineering Computing	1	0	1		CSE 101, CE 201
CE	204	Introduction to Chemical Engineering Computing Lab	0	3	1	CE 203	
CE	205	Fluid Mechanics	3	0	3	MA 203	
CE	206	Organic Chemistry	3	0	3		CHEM 211
CE	207	Organic Chemistry Lab	0	3	1	CE 206	
			16	**6**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	301	Numerical Methods for Engineers	3	0	3		CSE 101, MA 201
CSE	301	Introduction to Artificial Intelligence	3	0	3		CSE 201
ARB	201	Literary Styles	2	0	2		ARB 102
CE	301	Chemical Engineering Thermodynamics	3	0	3		MA 202, CE 203
CE	302	Heat Transfer	3	0	3		CE 201 CE 205
CE	303	Mass Transfer	3	0	3		CE 205
			17	**0**	**17**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MS	301	Business and Entrepreneurship	2	0	2		ESP 201
ISL	301	Human Rights in Islam	2	0	2		ISL 201
CE	304	Separation Processes	3	0	3		CE 301
CE	305	Kinetics and Reactor Design	3	0	3	CE 307	MA 301
CE	306	Chemical Engineering Lab I	0	6	2		ESP 201, CE 302, CE 303
CE	307	Physical Chemistry	3	0	3		CE 301
CE	308	Physical Chemistry Lab	0	3	1	CE 307	
CE	300	Design Project I	1	3	2		ESP 201, CE 301, CE 302, CE 303
			14	**12**	**18**		

4th Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CE	401	Process Dynamics and Control	3	0	3		MA 301 CE 304
CE	402	Plant Design and Economics	3	0	3		CE 305, CE 306
CE	403	Chemical Engineering Lab II	0	6	2	CE 401	CE 305, CE 306
CE	4XX	Chemical Engineering Elective I	3	0	3		CE 300
CE	4XX	Chemical Engineering Elective II	3	0	3		CE 300
CE	400	Design Project II	1	3	2		MS 301, CE 305, CE 300
			13	**9**	**16**		

4th Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CE	490	Internship	0	0	6		122 Credits Completion
			0	**0**	**6**		

Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CE	404	Polymer Technology	3	0	3		CE 300
CE	405	Desalination	3	0	3		CE 300
CE	406	Corrosion	3	0	3		CE 300
CE	407	Process pollution control	3	0	3		CE 300

Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite

Bachelor of Science in Chemical Engineering

List of Course Description

Course Title	Description
General Chemistry I (CHEM 101)	An introduction to atomic structure, quantum theory, the periodic table, chemical bonds, reactions in solutions, properties of solutions and gases, thermochemistry, and electrochemistry.
General Physics I (PHY 101)	Fundamentals of physics, including laws of motion, practical applications, laboratory experiments, and development of relative thinking and graphing skills.
Calculus I (MA 101)	An introduction to differential calculus covering limits, continuity, derivatives, applications such as rates of change, approximations, optimizations, curve sketching, and Rolle's and the Mean Value Theorem.
Introduction to Academic Discourse (ESP 401)	Academic reading, writing, and vocabulary skills; writing paragraphs on engineering topics, and engaging with scientific texts through critique and analysis.
Practical Grammar (ARB 101)	Aims to enhance students' linguistic production by providing grammatical rules that promote coherence and clarity in texts, focusing on style analysis.
Health and Physical Education (HPE 101)	Practical training to promote general health and physical fitness, emphasizing values, independence, and responsibility.
General Physics II (PHY 102)	Topics include wave motion, sound, thermodynamics, Coulomb's Law, electric and magnetic fields, electrical circuits, and their connections to everyday life situations.
Calculus II (MA 102)	An introduction to integral calculus covering techniques of integration, arc length, areas, volumes, sequences and series, Taylor and Maclaurin series.
Introduction to Report Writing (ESP 102)	Empowering students to write academic and professional reports, focusing on both long and short reports, graphical representations, and the fundamentals of data collection and analysis.
Objective Writing (ARB 102)	Introducing students to objective writing in essays, reports, evaluations, summaries, scientific research, and administrative writing in Arabic.
Faith and Its consequences (ISL 101)	This course explains the roots of sound faith, characteristics of Islamic faith, the Islamic description of the universe, humanity, and life, and the reasons for increasing faith.
Introduction to Programming (CSE 101)	Introduces basic programming concepts, covering topics such as variables, expressions, decision structures, loops, functions, lists, files, exceptions, and an introduction to objects and classes.
Calculus III (MA 201)	Exploring calculus in multiple dimensions, covering topics such as parametric equations, polar coordinates, three-dimensional coordinate systems, vectors, partial derivatives, double integrals, and rectangular and polar coordinate integrals.
Industrial Process Control (CMET 204)	Introduces the fundamental principles of controlling industrial variables, including common systems such as PLC, DCS, and SCADA.
Probability and Statistics in Engineering and Sciences (MA 202)	Provides fundamental applications of probability and statistics in engineering and science fields, covering topics such as frequency distributions, measures of central tendency, probability rules, random variables, the Central Limit Theorem, confidence intervals, and hypothesis testing.
Academic and Professional Communication (ESP 201)	Developing students' oral and written communication skills in academic and professional settings. Includes preparing presentations, participating in meetings, writing memos, letters, minutes of meetings, cover letters, and resumes.
Professional Ethics (ISL 201)	Introducing students to the concept of ethics in Islam and its relation to faith, worship, relationships, and management and workplace ethics. Also includes a study of professional violations and how to handle them with examples from the Saudi labor system.
General Chemistry II (CHEM 211)	Introduces students to advanced topics in chemistry such as modern materials, quantum chemistry, chemical kinetics, equilibrium, acids and bases, spontaneous reactions, environmental chemistry, coordination chemistry, nuclear chemistry, and organic chemistry.
General Chemistry Lab (CHEM 212)	Provides laboratory experiments related to laboratory safety, properties of materials, quantum chemistry, chemical kinetics, equilibrium, acids and bases, environmental chemistry, coordination chemistry, nuclear chemistry, and organic chemistry.
Principles of Chemical Engineering (CL 201)	Introduces the basic principles for calculating process and energy variables, applying calculations related to mass and energy balances in reactive and non-reactive processes. The course also covers numerical methods for solving chemical engineering problems.
Elements of Differential Equations (MA 205)	Introduces students to the fundamentals of ordinary differential equations and their applications, including techniques for solving first-order equations, linear equations, higher-order differential equations, and series solutions.
Introduction to Data Science (CSE 201)	Introduces students to data science techniques and their application to practical engineering problems, covering topics in statistics, linear algebra, and optimization from a data science perspective.
Materials Science (CE 202)	Studies concepts in materials science for chemical engineering, including material structure, thermodynamics of condensed phases, kinetic properties, mechanics of materials, and the electrical, magnetic, and optical properties of materials, in addition to material processing.
Introduction to Chemical Engineering Computing (CE 203)	Introduces the fundamental principles of using software to solve chemical engineering problems, such as thermodynamics, mass and energy balances, fluid flow, and reaction engineering.
Introduction to Chemical Engineering Computing Lab (CE 204)	Provides students with hands-on experience in applying principles and techniques related to using software to solve problems in chemical engineering.
Fluid Mechanics (CE 205)	Studies concepts and theories fundamental to fluid mechanics and their applications in process engineering. The course includes properties of fluids, liquid pressure and constants, energy equations, momentum analysis, flow in pipes, and flow through packed beds.

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Bachelor of Science in Chemical Engineering

List of Course Description

Organic Chemistry (CE 206)	Introduces fundamental concepts and theories in organic chemistry, including organic compounds, synthesis, organic reactions, and characterization techniques.
Organic Chemistry Lab (CE 207)	Conducts laboratory experiments related to concepts and theories in organic chemistry, helping students apply theoretical knowledge practically.
Numerical Methods for Engineers (MA 301)	Covers topics such as roots of equations, systems of linear algebraic equations, numerical differentiation, interpolation, least squares analysis and regression, as well as numerical solutions for ordinary and partial differential equations.
Introduction to Artificial Intelligence (CSE 301)	Reviews the latest developments in artificial intelligence, including fundamental issues, search strategies, knowledge representation, basic machine learning, reasoning under uncertainty, and neural networks.
Literary Patterns (ARB 201)	Develops essential linguistic communication skills for students in their professional careers, contributing to enhancing their expressive abilities and competencies in skills such as speaking, presenting, persuading, and interacting effectively with others.
Thermodynamics in Chemical Engineering (CE 301)	Studies concepts and theories related to thermodynamics in processes relevant to chemical engineering, including a review of fundamentals and applications of the first and second laws of thermodynamics.
Heat Transfer (CE 302)	Covers concepts and principles related to heat transfer, including modes of transfer, differential equations, conduction, and convection under various conditions.
Mass Transfer (CE 303)	Studies concepts and principles related to mass transfer and its applications, including Fick's Law, permeability calculations, and mass transfer equations.
Business and Entrepreneurship (MS 301)	Introduces the fundamentals of business and entrepreneurship, focusing on identifying and evaluating business opportunities, developing business plans, and how to finance and manage businesses.
Human Rights in Islam (ISL 301)	Educates students about the concept of human rights and their advantages in Islam, in addition to the basic human rights in Islam and the associated doubts.
Separation Processes (CE 304)	Studies the fundamental concepts of separation processes, including liquid-vapor phase equilibrium, flash distillation, column distillation, absorption, and extraction.
Kinetics and Reactor Design (CE 305)	Covers concepts and theories related to kinetics and reactor design, focusing on chemical reaction kinetics and the basic design of reactors.
Chemical Engineering Lab I (CE 306)	Provides students the opportunity to conduct practical experiments in the fields of thermodynamics and transport phenomena (heat and mass) and momentum.
Physical Chemistry (CPE 307)	Introduces concepts and theories related to physical chemistry, including solutions, chemical equilibrium, chemical kinetics, and electrochemistry.
Physical Chemistry Lab (CE 308)	Covers laboratory experiments related to concepts and theories in physical chemistry.
Design Project I (CE 300)	Focuses on starting a project or research idea and forming a team to apply the acquired engineering knowledge and skills, emphasizing the development of solutions for real-world engineering problems.
Process Dynamics and Control (CE 401)	Covers concepts and theories related to process dynamics and control, including process control and theoretical models.
Plant Design and Economics (CE 402)	Studies process design and the associated economics, including estimating capital costs and designing heat exchangers.
Chemical Engineering Lab II (CE 403)	Allows students to conduct practical experiments in mass transfer, separation processes, and kinetics of chemical reactions.
Design Project II (CE 400)	Completes design projects initiated by students in Design Project I, where students will implement their projects based on the designated timeline.
Internship (CE 490)	Involves a 12-week industrial work period followed by two weeks of overall assessment
Polymer Technology (CE 404)	Covers the basic principles and mechanisms of homogeneous and heterogeneous polymerization processes, as well as the structure and properties of physical polymers and their relationships. It also includes the chemical, mechanical, and engineering properties of polymers and polymer processing techniques.
Water Desalination (CE 405)	Introduces thermal desalination and membrane principles, offering a fundamental understanding of various desalination techniques and their current and future technological significance and economic impact.
Corrosion (CE 406)	Covers the technical and economic aspects of corrosion problems, electrochemistry and its application to corrosion, and the various types of corrosion. Topics include pitting corrosion, crevice corrosion, stress corrosion cracking, as well as corrosion theories and protection methods.
Process Pollution Control (CE 407)	It covers types of pollution and their relationship to the ecosystem and their negative effects on human health. It includes industrial pollution control techniques, water quality measurement, and the design of physical, chemical, and biological treatment methods, along with waste management and site pollutant analysis.

Targeted Jobs

- Chemical Engineer
- Process Engineer
- Safety Engineer
- Production Engineer
- Environmental Engineer
- Design Engineer
- Research and Development Engineer
- Quality Engineer

Diploma in Science in Process Operations & Chemical Analysis Technology

Program Description

The Diploma in Science in Process Operations and Chemical Analysis Technology program is designed to equip students with the necessary skills and knowledge to excel in the fields of chemical engineering and laboratory analysis. The program focuses on providing a comprehensive understanding of process operations, analytical techniques, and the application of modern technologies in chemical analysis.

Program Outcomes

- To have the Chemical Engineering and Laboratory Analysis Technology program recognized as one of the leading programs in the country.
- To graduate qualified technicians ready to work in chemical engineering and laboratory analysis fields to meet the needs of the national industry.
- To provide graduating technicians with the latest tools in chemical engineering technology and laboratory analysis.
- To equip graduating technicians with the knowledge and skills necessary to continue their studies to higher levels.
- To provide graduating technicians with the essential skills and competencies to meet the labor market needs.
- To graduate technicians capable of keeping up with continuously evolving technology.

Study Plan

Diploma in Science in Process Operations & Chemical Analysis Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
GSCH	101	General Chemistry	3	3	4		
ENGT	101	Engineering Drafting	1	3	2		
GSPE	101	Physical Education I	0	2	1		
CMET	101	Intro.to Chem.Engg.Tech.	3	0	3	CMET 105	
CMET	105	Fluid Mechanics	2	3	3	GSCH 101	
			14	**11**	**18**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	102	English Composition	2	0	2		ENG 101
GSPH	101	General Physics	3	3	4		
GSMA	102	Calculus II	3	0	3		GSMA 101
CMET	102	Methods of Chem. Analysis	2	3	3		GSCH 101
CMET	103	Applied Organic Chemistry	2	3	3		GSCH 101
CMET	106	Process Heat Transfer	2	3	3	GSPH 101	CMET 101 CMET 105 GSMA 101
			14	**12**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ELET	104	Computer Programming	1	3	2		
ENGT	201	Industrial safety	0	2	1		ENG 102
GSST	201	Applied Statistics	2	0	2		GSMA 102
CMET	202	Chem.Engg. Thermody	2	3	3		CMET 106
CMET	205	Mass Transfer Operations	2	3	3		CMET 106
CMET	231	Petroleum Refining & Testing	3	3	4		CMET 103
			10	**14**	**15**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	201	Technical Report Writing	3	0	3		ENG 102
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
ENGT	202	Industrial Supervision	1	0	1		ENG 102
CMET	203	Environmental Pollution	2	3	3		CMET 102 CMET231
CMET	204	Process Inst. & Control	2	3	3		CMET 202 ELET 104
CMET	232	Petrochemicals	3	3	4		CMET 205 CMET 231
			13	**9**	**16**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CMET	300	Co-op Training (14 Weeks or 560 Hours)	0	40	3		Student should finish 67 Crdt.Hrs

Targeted Jobs

- Control Room Operators
- Laboratory Technician
- Oil Refineries
- Natural Gas Liquefaction
- Paint Manufacturing
- Pharmaceutical Industry
- Gypsum Industry
- Wastewater Treatment

Diploma in Science in Process Operations & Chemical Analysis Technology

List of Course Description

Course Title	Description
Communication in English (ENGI01)	This course focuses on communication skills in the workplace, where students learn to write business letters and participate in discussions and effective presentations.
Calculus I (GSMA101)	Covers the concepts of differentiation necessary for science and engineering, such as limits, continuity, derivatives, and partial differentiation.
General Chemistry (GSCH101)	Aims to provide students with a foundational knowledge of chemistry, including atomic structure, chemical bonds, gases, thermodynamics, and chemical kinetics.
Engineering Drawing (ENGT101)	Introduces technical drawing using computer-aided design, including developing engineering drawings according to international standard
Physical Education (GSPE101)	Focuses on promoting physical activity and developing a healthy lifestyle.
Introduction to Chemical Engineering Technology (CMET101)	Focuses on the basic calculations and techniques used in the chemical process industry, including material and energy balances for both reactive and non-reactive systems.
Fluid Mechanics (CMET105)	Explains the phenomena and principles of fluid flow and their application in industrial systems, including static and dynamic flow analysis.
Chemical Analysis Methods (CMET102)	Focuses on chemical methods and instrumental techniques used in industrial analysis, including spectroscopy and chromatography.
Applied Organic Chemistry (CMET103)	Covers fundamental concepts in organic chemistry and its applications in industries such as petroleum, pharmaceuticals, and plastics.
Heat Transfer (CMET106)	Introduces the fundamentals of heat transfer and its applications in industrial equipment such as heat exchangers, boilers, and condensers.
Computer Programming (ELET104)	Introduces students to problem-solving techniques using the programming language "C," covering basic aspects such as input/output statements and control structures.
Industrial Safety (ENGT201)	Addresses the principles of safety in the industrial workplace, including hazard recognition and risk management according to international standards.
Applied Statistics (GSST201)	Covers the concepts and techniques of statistics used in data analysis, such as frequency distributions, hypothesis testing, and regression.
Industrial Process Control (CMET204)	Provides the fundamental principles of controlling industrial variables, including common systems such as PLC, DCS, and SCADA.

Electrical Engineering Department

The Electrical Engineering Department at Yanbu Industrial College is a distinguished destination for technical and applied education in the fields of Electrical Engineering, Electrical Technology, Electronics and Communication Technology, and Instrumentation Technology. Operating under the umbrella of the Royal Commission for Jubail and Yanbu, we are committed to delivering high-quality education that aligns with industry needs, ensuring our graduates are fully prepared to enter the workforce with efficiency and professionalism.

Department Goals

• Excellence in Education and Training: Continuously enhance the quality of our programs in Electrical Engineering, Electrical Technology, Electronics and Communication Technology, and Instrumentation Technology to meet industry standards and prepare students for impactful careers.

• Institutional Strength and Support: Build a resilient and resourceful department that supports faculty and students through professional development opportunities, modern facilities, and a robust academic environment.

• Community and Industry Partnerships: Foster collaborations with industry and community organizations to provide students with practical experience, internships, and community engagement opportunities.

Academic Programs

• **Bachelor** of Science in Electrical Engineering
• **Diploma** in Electrical Power Technology
• **Diploma** in Electronics and Communication Technology
• **Diploma** in Instrumentation and Control Technology
• **Diploma** in Mechatronics Technology

Bachelor of Science in Electrical Engineering

Program Description

To prepare job-ready graduates to work in the industry or other related fields by providing high-quality education in electrical engineering.

Program Outcomes

•Demonstrate an understanding of theories, principles, and concepts of engineering, science, and mathematics.
•Demonstrate an understanding of concepts, techniques, and practices of modeling, analysis, and design of electrical and electronics systems.
•Demonstrate an understanding of the current developments in the engineering field in addition to research and inquiry methodologies.
•Apply integrated theories, principles, and concepts of engineering, science, and mathematics to solve complex engineering problems.
•Analyze and design electrical and electronics systems using critical thinking to develop proper, creative, or innovative solutions that meet specified needs and considerations.
•Carry out and develop appropriate experimentation, research, investigation, or procedure using engineering tools, techniques, and resources to study or solve complex engineering issues and problems.
•Communicate effectively to demonstrate theoretical knowledge comprehension and specialized transfer of knowledge, skills, and complex ideas to a range of audiences.
•Use mathematical operations and quantitative methods to process data and to solve

Targeted Jobs

- Electrical Engineer
- Project Engineer
- Quality Engineer
- Research Engineer
- Sales Engineer

Study Plan

Bachelor of Science in Electrical Engineering

1st Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CHEM	101	General Chemistry I	3	3	4		
PHY	101	General Physics I	3	3	4	MA 101	
MA	101	Calculus I	4	0	4		
ESP	101	Introduction to Academic Discourse	3	0	3		
ARB	101	Practical Grammar	2	0	2		
PE	101	Health and Physical Education	1	0	1		
			16	**6**	**18**		

1st Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
PHY	102	General Physics II	3	3	4	MA 102	PHY 101
MA	102	Calculus II	4	0	4		MA 101
ESP	102	Introduction to Report Writing	3	0	3		ESP 101
ARB	102	Objective Writing	2	0	2		ARB 101
ISL	101	Belief and Its Consequences	2	0	2		
CSE	101	Introduction to Programming	1	3	2		
			15	**6**	**17**		

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	201	Calculus III	3	0	3		MA 102
MA	202	Probability and Statistics for Engineers	3	0	3		MA 102
ESP	201	Academic and Professional Communication	3	0	3		ESP 102
ISL	201	Professional Ethics	2	0	2		ISL 101
CSE	221	Digital Logic Design	3	0	3		PHY 102
EE	201	Electrical Circuits I	3	0	3		PHY 102, MA 102
			17	**0**	**17**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	203	Elements of Differential Equations	3	0	3		MA 102
CSE	201	Introduction to Data Science	3	0	3		CSE 101, MA 202
ARB	201	Literary Styles	2	0	2		ARB 102
EE	202	Electronics I	3	0	3		EE 201, CSE 221
EE	203	Electronics I Lab	0	3	1	EE 202	
EE	204	Signals and Systems	3	0	3		EE 201
EE	205	Electric Circuits II	2	0	2		EE 201
EE	206	Electric Circuits II Lab	0	3	1	EE 205	
			16	**6**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CSE	301	Introduction to Artificial Intelligence	3	0	3		CSE 201
ISL	301	Human Rights in Islam	2	0	2		ISL 201
PHY	321	Electricity and Magnetism	3	0	3		MA 201, MA 203, PHY 102
EE	301	Electronics II	3	0	3		EE 202
EE	302	Electrical Energy Engineering	3	0	3		EE 205
EE	303	Electrical Energy Engineering Lab	0	3	1	EE 302	
EE	304	Control Engineering	3	0	3		EE 204
EE	305	Control Engineering Lab	0	3	1	EE 304	
			17	**6**	**19**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	301	Numerical Methods for Engineers	3	0	3		CSE 101, MA 201
MS	301	Business and Entrepreneurship	2	0	2		ESP 201
EE	306	Fundamentals of Electrical Engineering Design	3	0	3		EE 202
EE	307	Communications Engineering	3	0	3		EE 202
EE	308	Communications Engineering Lab	0	3	1	EE 307	
EE	309	Digital Systems Engineering	3	0	3		CSE 101, CSE 221
EE	310	Digital Systems Engineering Lab	0	3	1	EE 309	
EE	300	Design Project I	1	3	2		ESP 201, EE 301, EE 302, EE 304
			15	**9**	**18**		

4th Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
EE	401	Electromagnetic Waves and Applications	3	0	3		PHY 321
EE	402	Electromagnetic Waves and Applications Lab	0	3	1	EE 401	
EE	4xx	Electrical Engineering Elective I	3	0	3		EE 300
EE	4xx	Electrical Engineering Elective II	3	0	3		EE 300
EE	4xx	Electrical Engineering Elective III	3	0	3		EE 300
EE	400	Design Project II	1	3	2		MS 301, EE 306, EE 300
			13	**6**	**15**		

4th Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
EE	490	Internship	0	0	6		122 Credits Completion
			0	**0**	**6**		

Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
EE	403	Digital Image Processing	3	0	3		EE 300
EE	404	Introduction to Nanotechnology	3	0	3		EE 300
EE	405	System-on Chip (SoC) Design	3	0	3		EE 300
EE	406	Distributed Control System and SCADA	3	0	3		EE 300
EE	407	Industrial Communication Systems	3	0	3		EE 300

Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
EE	408	Power System Analysis	3	0	3		EE 300
EE	409	Modeling of Electric Machines	3	0	3		EE 300
EE	410	Power Electronics	3	0	3		EE 300
EE	411	Power System Planning and Operation	3	0	3		EE 300
EE	412	Renewable Energy	3	0	3		EE 300

Bachelor of Science in Electrical Engineering

List of Course Description

General Chemistry I (CHEM 101):	A 4-credit course covering key topics such as atomic structure, quantum theory, the periodic table, chemical bonding, reactions in aqueous solutions, gases, thermochemistry, and electrochemistry.
General Physics I (PHY 101):	General Physics I (PHY 101): A 4-credit course focusing on fundamental physics laws, principles of motion, and their application in problem-solving, along with hands-on lab experiments.
Calculus I (MA 101):	A 4-credit course introducing differential calculus, covering limits, continuity, derivatives, and real-life applications of these concepts.
Introduction to Academic Discourse (ESP 101):	A 3-credit course aimed at developing academic reading, writing, and vocabulary skills, with a focus on engaging with various discourse genres.
Electrical Circuits I (EE 201):	A 3-credit course on direct current (DC) electrical circuits, covering essential laws, theorems, and network analysis techniques.
Digital Logic Design (CSE 221):	Professional Ethics (ISL 201): A 2-credit course on the concept of ethics in Islam, focusing on professional conduct and the Islamic perspective on work ethics and violations.
Practical Grammar (ARB 101):	A 2-credit course designed to improve linguistic skills by focusing on grammatical rules and text analysis to enhance cohesion and clarity in writing.
Health and Physical Education (HPE 101):	A 1-credit course providing practical exercises aimed at improving physical health and overall well-being.
General Physics II (PHY 102):	A 4-credit course covering wave motion, sound, thermodynamics, and the basics of electricity and magnetism, linking concepts to everyday applications.
Calculus II (MA 102):	A 4-credit course building on Calculus I, focusing on integral calculus, techniques of integration, and the application of calculus to real-world problems.
Introduction to Report Writing (ESP 102):	A 3-credit course focusing on the essentials of writing various types of reports for academic and professional contexts, including graphical representation and referencing.
Objective Writing (ARB 102):	A 2-credit course introducing objective writing in Arabic, covering essays, summaries, reports, and administrative documents.
Belief and Its Consequences (ISL 101):	Introduction to Artificial Intelligence (CSE 301): A 3-credit course covering fundamental AI concepts, including machine learning, search strategies, and neural networks.
Electrical Circuits II (EE 205):	A 2-credit course on alternating current (AC) circuits, focusing on mutual inductance, power

Signals and Systems (EE 204):	A 3-credit course introducing the principles of signals and systems, covering Fourier analysis, Laplace transforms, and discrete-time systems.
Belief and Its Consequences (ISL 101):	A 2-credit course that explores the foundations of Islamic faith, emphasizing its role in life and the factors that strengthen belief.
Introduction to Programming (CSE 101):	A 2-credit course providing an introduction to programming concepts, including variables, decision structures, loops, and basic object-oriented programming.
Calculus III (MA 201):	A 3-credit course covering multi-variable calculus, including parametric equations, polar coordinates, and partial derivatives.
Probability and Statistics for Engineers (MA 202):	A 3-credit course introducing probability and statistics, with applications in engineering and sciences, focusing on hypothesis testing and regression analysis.
Digital Logic Design (CSE 221):	A 3-credit course introducing digital systems, Boolean algebra, and logic gates, with a focus on design and analysis of digital circuits.
Electrical Circuits I (EE 201):	A 3-credit course on direct current (DC) electrical circuits, covering essential laws, theorems, and network analysis techniques.
Elements of Differential Equations (MA 203):	A 3-credit course on ordinary differential equations, focusing on solution techniques and their applications in various fields.
Introduction to Data Science (CSE 201):	A 3-credit course covering data science principles, including statistics, linear algebra, and optimization, with a focus on practical engineering applications.
Electronics I (EE 202):	A 3-credit course covering the fundamentals of electronics, including semiconductor theory, diodes, BJTs, MOSFETs, and operational amplifiers.
Electronics I Lab (EE 203):	A 1-credit lab course providing hands-on experience with analog and digital electronic circuits, focusing on measurement and construction.
Electrical Circuits II Lab (EE 206):	A 1-credit lab course focusing on experiments with both DC and AC circuits, using physical components and simulation methods.
Human Rights in Islam (ISL 301):	A 2-credit course exploring human rights from an Islamic perspective, addressing misconceptions and highlighting the importance of honoring humanity.
Electricity and Magnetism (PHY 321):	A 3-credit course focusing on electricity, magnetism, and the electrical properties of materials, including semiconductors and photonics.
Literary Styles (ARB 201):	A 2-credit course aimed at developing effective linguistic communication and presentation skills, with an emphasis on professional and practical contexts.

Bachelor of Science in Electrical Engineering

List of Course Description

Electronics II (EE 301):	A 3-credit course covering advanced electronics topics such as amplifier frequency response, multi-stage amplifiers, and data converters.
Electrical Energy Engineering (EE 302):	A 3-credit course focusing on electric energy systems, including transformers, DC and AC machines, and transmission lines
Electrical Energy Engineering Lab (EE 303):	A 1-credit lab course providing practical training in electrical energy machinery, focusing on motors, generators, and transformers.
Control Engineering (EE 304):	A 3-credit course on feedback control systems, covering system stability, time and frequency domain analysis, and control system design.
Control Engineering Lab (EE 305):	A 1-credit lab course focusing on control engineering experiments, including response analysis and motor control.
Numerical Methods for Engineers (MA 301):	A 3-credit course covering numerical methods for solving engineering problems, including error analysis and regression techniques.
Business and Entrepreneurship (MS 301):	A 2-credit course introducing the fundamentals of business and entrepreneurship, focusing on developing business plans and managing finances.
Fundamentals of Electrical Engineering Design (EE 306):	A 3-credit course covering the electrical engineering design process, including problem identification and system design.
Communications Engineering (EE 307):	A 3-credit course on communication systems, covering amplitude modulation, frequency modulation, and digital communication techniques.
Communications Engineering Lab (EE 308):	A 1-credit lab course providing hands-on experience with communication systems, including signal measurement and analysis.

Digital Systems Engineering (EE 309):	A 3-credit course covering embedded systems, microcontroller architecture, and hardware blocks, with design and interfacing applications.
Power Electronics (EE 410):	Power System Planning and Operation (EE 411): A 3-credit course on power system planning, including load forecasting, economic dispatch, and system stability analysis.
Power System Analysis (EE 408):	Distributed Control System and SCADA (EE 406): A 3-credit course covering distributed control systems and SCADA, focusing on remote sensing and industrial process control.
System-on-Chip (SoC) Design (EE 405):	Introduction to Nanotechnology (EE 404): A 3-credit course providing an introduction to nanotechnology, exploring its applications in various engineering fields.
Digital Image Processing (EE 403):	A 3-credit course covering image processing techniques, including image enhancement, transformation, and filtering.
Internship (EE 490):	A 6-credit course involving a 12-week industrial placement, followed by evaluation and reflection.
Electromagnetic Waves and Applications Lab (EE 402):	A 1-credit lab course providing practical training on electromagnetic waves, transmission lines, and antennas.
Design Project II (EE 400):	A 2-credit course focusing on completing the capstone design project initiated in Design Project I.
Digital Systems Engineering Lab (EE 310):	A 1-credit lab course focusing on experiments related to embedded systems and digital systems design.
Design Project I (EE 300):	A 2-credit course focusing on initiating a capstone design project, integrating engineering knowledge to solve real-world problems

Bachelor of Science in Electrical Engineering

List of Course Description

Electromagnetic Waves and Applications (EE 401):	A 3-credit course covering the principles of electromagnetic waves, including wave propagation, electrostatics, and magnetostatics.
Electromagnetic Waves and Applications Lab (EE 402):	Electromagnetic Waves and Applications Lab (EE 402): A 1-credit lab course providing practical training on electromagnetic waves, transmission lines, and antennas.
Design Project II (EE 400):	A 2-credit course focusing on completing the capstone design project initiated in Design Project I.
Internship (EE 490):	A 6-credit course involving a 12-week industrial placement, followed by evaluation and reflection.
Digital Image Processing (EE 403):	A 3-credit course covering image processing techniques, including image enhancement, transformation, and filtering
Introduction to Nanotechnology (EE 404):	A 3-credit course providing an introduction to nanotechnology, exploring its applications in various engineering fields.
System-on-Chip (SoC) Design (EE 405):	A 3-credit course on designing digital system-on-chip (SoC) using FPGAs and ARM-based processors, covering hardware-software co-design principles.
Distributed Control System and SCADA (EE 406):	A 3-credit course covering distributed control systems and SCADA, focusing on remote sensing and industrial process control.
Industrial Communication Systems (EE 407):	A 3-credit course focusing on designing and maintaining industrial communication networks like Modbus and Ethernet.
Power System Analysis (EE 408):	A 3-credit course covering power system analysis, including fault analysis, load flow problems, and system reliability.
Modeling of Electric Machines (EE 409):	A 3-credit course on electric machine dynamics, focusing on DC and induction motors, as well as modern applications.
Power Electronics (EE 410):	A 3-credit course on power electronics, covering components like rectifiers, AC voltage controllers, and inverters.
Power System Planning and Operation (EE 411):	A 3-credit course on power system planning, including load forecasting, economic dispatch, and system stability analysis.
Renewable Energy (EE 412):	A 3-credit course introducing renewable energy sources, including solar, wind, fuel cells, and the design of integrated systems.

Diploma in Electrical Power Technology

Program Description

The Associate Degree of Science in Electrical Power Technology program aims to provide students with the technical knowledge and practical skills necessary to work as Electrical Power Engineering technicians and technologists in the industry, particularly in the Yanbu Industrial City and Saudi Arabia.

Program Outcomes

- Demonstrate understanding of science, mathematics, and electrical power engineering technology concepts.
- Identify and apply appropriate engineering standards and codes.
- Solve engineering technology problems using standard procedures.
- Design solutions for technical problems.
- Conduct tests, measurements, and analyze results.
- Assist in designing components and systems related to electrical power engineering.
- Communicate effectively in technical environments.
- Function as a member of technical teams.
- Engage in self-directed learning and professional responsibilities.

Study Plan

Diploma in Electrical Power Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
GSPH	101	General Physics	3	3	4		
GSPE	101	Physical Education I	0	2	1		
ELET	101	Electrical Circuits I	2	3	3	GSPH 101	
ELET	104	Computer Programming	1	3	2		
			11	**11**	**15**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSCH	101	General Chemistry	3	3	4		
GSMA	102	Calculus II	3	0	3		GSMA 101
ENG	102	English Composition	2	0	2		ENG 101
ELET	102	Electrical Circuits II	2	3	3		ELET 101
ELET	103	Electrical Machines I	2	3	3	ELET 102	ELET 101
ELET	105	Electronics I	2	3	3	ELET 102	ELET 101
			14	**12**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSST	201	Applied Statistics	2	0	2		GSMA 102
ENGT	201	Industrial safety	0	2	1		ENG 102
ELET	201	Basic Industrial Electronics	2	3	3		ELET 105
ELET	202	Digital Electronics I	1	3	2		ELET 105
ELET	203	Control System Components	2	3	3		GSMA 102
ELET	221	Electrical Installations	2	3	3		ELET 102
ELET	222	Electrical Machines II	2	3	3		ELET103
			11	**17**	**17**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
ENG	201	Technical Report Writing	3	0	3		ENG 102
ENGT	202	Industrial Supervision	1	0	1		ENG 102
ELET	223	Electrical Motor Control	2	3	3		ELET 201, ELET 203, ELET 222
ELET	224	Electrical Power Systems	3	3	4		ELET 222
ELET	225	Electrical Trbl Shtg & Maint	2	6	4	ELET 223, ELET 224	ELET 222
			13	**12**	**17**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ELET	320	Co-op Training (14 Weeks or 560 Hours)	0	40	3		Student should finish 67 Crdt.Hrs

Targeted Jobs

- Assistant Electrical Supervisor
- Electrical Technician
- Power Plant Operator,
- Lab Technician
- Substation Technician
- Electrical Maintenance Technician
- Associate Load Dispatcher
- Residential and Commercial Wiring Technician

Diploma in Electrical Power Technology

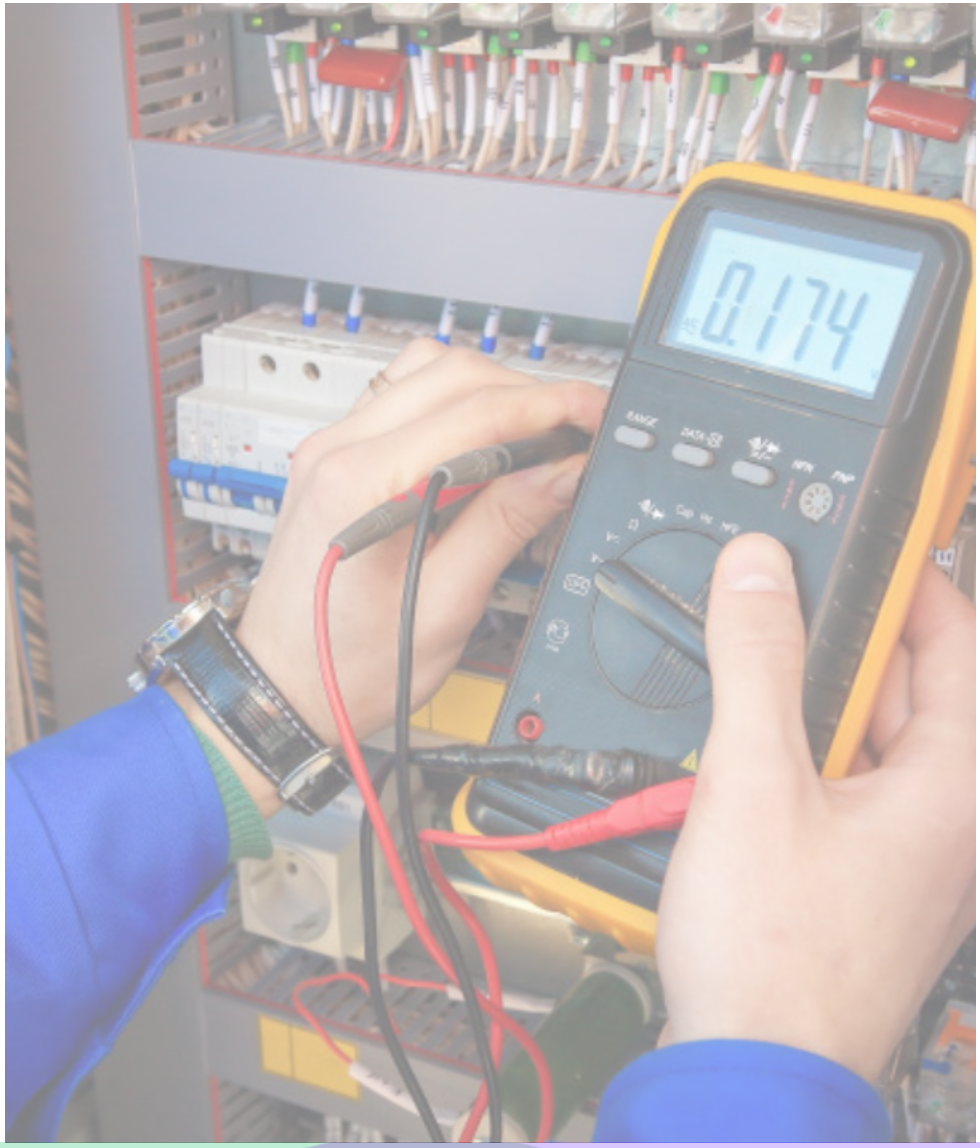
List of Course Description

English Communication: (ENG 101)	**A course focusing on workplace communication. Students learn business letter writing, group discussions, debates, and oral presentations.**
Calculus I (GSMA 101):	Introduces differential calculus, covering limits, continuity, differentiation, and their applications in science and technology.
General Physics (GSPH 101):	An algebra-based course covering motion, energy, electricity, magnetism, heat, and light. It includes laboratory activities for hands-on learning.
Physical Education (GSPE 101):	A physical education course aimed at enhancing physical fitness and promoting well-being through various exercises.
Electric Circuits I (ELET 101):	Covers basic electrical circuit concepts such as current, voltage, power, Ohm's law, KVL, KCL, and circuit theorems, supported by laboratory experiments.
Computer Programming(ELET 104):	Introduces problem-solving techniques using the C programming language, covering control statements, arrays, pointers, and structures, with lab exercises.
General Chemistry (GSCH 101):	Covers atomic structure, chemical bonding, gases, solutions, thermochemistry, acids, bases, and electrochemistry, supported by lab experiments
Calculus II (GSMA 102):	Focuses on integral calculus, including techniques of integration, applications of definite integrals, and introductory differential equations.
English Composition (ENG 102):	Focuses on written technical communication, exposing students to technical writing, data presentation, and producing technical reports.
Electrical Circuits II (ELET 102):	Covers alternating current circuits, three-phase systems, resonance, and filters, with theory supported by lab experiments.
Electrical Machines I (ELET 103):	Introduces magnetism, magnetic circuits, DC machines, transformers, and their industrial applications, with laboratory support.
Electronics I (ELET 105):	Covers semiconductors, diodes, transistors, operational amplifiers, amplifiers, oscillators, and regulated power supplies, with practical lab experiments.
Applied Statistics (GSST 201):	Covers statistical methods, including data analysis, probability, hypothesis testing, regression, and variance analysis, with one lab session per week.
Industrial Safety (ENGT 201):	Focuses on workplace safety, risk management, safety equipment, accident prevention, and industrial safety laws and standards.
Basic Industrial Electronics (ELET 201):	Introduces power electronic devices and their applications in industry, covering rectifiers, controllers, converters, and troubleshooting power supplies.
Digital Electronics I (ELET 202):	Covers digital electronics, including logic gates, Boolean algebra, flip-flops, counters, and basic microprocessor concepts, supported by lab exercises.
Control System Components (ELET 203):	Introduces process control systems, control system components, and programmable logic controllers (PLCs), with lab exercises using Simulink.
Electrical Installations (ELET 221):	Focuses on electrical installation practices, power requirements, layout drawings, conduit installation, and adherence to national electrical codes.
Electrical Machines II (ELET 222):	Covers poly-phase systems, three-phase transformers, induction motors, alternators, and industrial motor testing, with hands-on lab support.

Diploma in Electrical Power Technology

List of Course Description

Islamic Ideology and Thoughts (GSIS 101):	Explores Islamic beliefs, principles, and thoughts, focusing on their application in daily life.
Technical Report Writing (ENG 201):	Enhances skills in writing technical reports, incorporating visuals and graphics to improve clarity and effectiveness.
Industrial Supervision (ENGT 202):	Provides knowledge on the role of supervision in industry, focusing on the responsibilities of supervisors and the skills required for effective management.
Electrical Motor Control (ELET 223):	Covers industrial control systems, including manual and automatic motor control, electromagnetic devices, and control circuits, with lab exercises.
Electrical Power Systems (ELET 224):	An introduction to power systems, covering power generation, transmission, distribution, substations, switchgear, and power factor correction, with lab work.
Electrical Troubleshooting and Maintenance (ELET 225):	Covers troubleshooting and maintenance techniques for electrical machines and systems, including safety procedures, testing, and repair practices.
Co-op Training (ELET 320):	A hands-on industrial training program where students apply their knowledge in a real work environment, concluding with a technical report and presentation.



Diploma in Electronics and Communication Technology

Program Description

The Associate Degree in Electronics and Communication Technology Program (ECTP) at Yanbu Industrial College aims to prepare young Saudis for mid to high-level positions in industry, commerce, and government. The program provides foundational knowledge and practical skills in electronics and communication technology, emphasizing industry-relevant expertise.

Program Outcomes

- Demonstrate an understanding of science, mathematics, and technology related to electronics and communication engineering.
- Solve engineering technology problems and design technical solutions.
- Conduct tests, measurements, and analyses in electronics.
- Communicate effectively in technical and non-technical environments.
- Work both independently and collaboratively in technical teams.
- Commit to lifelong learning and adapt to technological advancements.

Targeted Jobs

- Engineering Assistant
- Electrical Technician
- Electronic Field Service Technician
- Electronic and Communication Technician
- Network and IT technician

Study Plan

Diploma in Electronics and Communication Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
GSPH	101	General Physics	3	3	4		
GSPE	101	Physical Education I	0	2	1		
ELET	101	Electric Circuit I	2	3	3	GSPH 101	
ELET	104	Computer Programming	1	3	2		
			11	**11**	**15**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSCH	101	General Chemistry	3	3	4		
GSMA	102	Calculus II	3	0	3		GSMA 101
ENG	102	English Composition	2	0	2		ENG 101
ELET	102	Electrical Circuits II	2	3	3		ELET 101
ELET	103	Electrical Machines I	2	3	3	ELET 102	ELET 101
ELET	105	Electronics I	2	3	3	ELET 102	ELET 101
			14	**12**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSST	201	Applied Statistics	2	0	2		GSMA 102
ENGT	201	Industrial safety	0	2	1		ENG 102
ENGT	202	Industrial Supervision	1	0	1		ENG 102
ELET	201	Basic Industrial Electronics	2	3	3		ELET 105
ELET	202	Digital Electronics I	1	3	2		ELET 105
ELET	203	Control System Components	2	3	3		GSMA 102
ELET	230	PCB Fabrication	0	3	1		ELET 105
ELET	231	Electronics II	2	3	3		ELET 105
			10	**17**	**16**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	201	Technical Report Writing	3	0	3		ENG 102
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
ELET	212	Microcontroller	1	3	2		ELET 104, ELET 202
ELET	232	Digital Electronics II	2	3	3		ELET 202
ELET	233	Analog & Digital Communications	2	3	3	ELET 232	ELET 231
ELET	234	Troubleshooting and Maintenance	0	6	2		ELET 230, ELET 231
ELET	235	Telecommunication systems	2	3	3	ELET 233	ELET 231
			12	**18**	**18**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ELET	330	Co-op Training (14 Weeks or 560 Hours)	0	40	3		Student should finish 67 Crdt.Hrs

Diploma in Electronics and Communication Technology

List of Course Description

ENG 101 (English Communication):	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
GSMA 101 (Calculus I):	Calculus I deals with the concept of differential calculus needed in mathematics, science and technology. Topics include: limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem solving sessions.
General Physics (GSPH 101):	General Physics is an algebra-based course. The aim of this course is to provide the students with basic principles of general physics for supporting in applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE 101):	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Electric Circuits I (ELET 101):	Electric Circuit I provides the student with an understanding of the concepts and techniques in the characterization of electrical circuits and their components. This course introduces the student to the basic concepts of current, voltage, power, electromagnetism, basic laws and theorems for the analysis of electric circuits. Students are familiarized with ohm's law, KVL, KCL and other basic theorems. Theory classes are supported by laboratory experiments to study, test and verify the characteristics of these basic electrical concepts.
Computer Programming (ELET 104):	Computer Programming introduces techniques to solve problems through computer programming using high level computer language 'C'. The students will learn problem solving techniques, basic programming concepts such as input/output statements and control statements, use of subprograms and structured data types such as arrays, pointers and structures. The course is supported by exercises in the laboratory.
General Chemistry (GSCH 101):	General Chemistry is intended to provide students with the knowledge and skills for understanding the basic principles of chemistry. The course covers topics on atomic structure, chemical bonding, gases, thermochemistry, solutions, kinetics, chemical equilibrium, acids and bases, electrochemistry and modern materials. The course is supported by digital media, both on CDs and online. It is also supported by experiments in the laboratory and in virtual chemlab using chemlab software.
Calculus II (GSMA 102):	Calculus II deals with the concepts of integral calculus needed in mathematics, basic science and technology. Topics include: integration, techniques of integration, definite integrals and their applications, numerical integration, and differential equations.
English Composition (ENG 102):	Composition is a second-semester ESP course designed for students pursuing their undergraduate studies in Mechanical, Electrical, Chemical or Electronic Engineering at Yanbu Industrial College, a part of the Colleges and Institutes of the Royal Commission at Yanbu, where the medium of instruction is English. Successful completion of ENG 101 - Communication is prerequisite for this course. This course is part of the Associate Degree Program and focuses on written technical communication for the workplace. Students are exposed to the fundamentals of technical writing. Students will produce graphs and charts, write applications to

Diploma in Electronics and Communication Technology

List of Course Description

	definitions and technical descriptions, actively take part in group work, and deliver effective oral presentations.
Electrical Circuits II (ELET 102):	Electrical Circuits II provides the student with an understanding of concepts of alternating current fundamentals and AC Circuits. The course includes topics related to three-phase systems, filters, two-port networks, and resonance. Practical circuits are analyzed using fundamental electrical laws and theorems to promote and strengthen the mathematical and analytical capabilities of the students and to help them understand and apply the concepts in the implementation of these electrical circuits. Theory classes are supported by laboratory exercises to model, simulate, and test electrical circuits.
Electrical Machines I (ELET 103):	Electrical Machines I deals with the fundamentals of magnetism, electromagnetism, magnetic circuits, DC electrical machines, and single-phase transformers. This course covers the principles of magnetism, magnetic fields, and the study of magnetic behavior of ferromagnetic material, B-H curves, and hysteresis. It includes the study of construction, operation, and characteristics of DC machines (generators and motors) and the starting speed control and applications of DC motors in industries. The course also covers the theory, construction, and operation of ideal and practical transformers and autotransformers, supported by laboratory exercises.
Electronics I (ELET 105):	Electronics I provides the student with an understanding of the physical properties and principles of operation of some common solid-state devices. It introduces the student to bipolar devices such as semiconductors, diodes, transistors, and unipolar devices such as junction field-effect transistors. Concepts of ideal op-amp characteristics and basic applications are also included. The course also deals with basic electronics circuits such as amplifiers, oscillators, and regulated power supplies, supported by laboratory experiments to study, test, troubleshoot, and verify the characteristics of these devices in typical electronic circuits.
Applied Statistics (GSST 201):	Applied Statistics deals with statistical concepts and techniques commonly used in data analyses, particularly in science and technology. Topics include data collection and sampling techniques; frequency distributions and graphs; basic statistical measures of central tendency and variability; probability and counting rules; normal distribution; hypothesis testing; correlation and regression; reliability and failure data analysis; and quality control charts. Application problems will be solved during problem-solving sessions.
Industrial Safety (ENGT 201):	Industrial Safety provides students insight into safer workplace practices, hazard recognition, minimization of hazards, and risk management. The course covers industrial safety principles and practices in the workplace and environments in mechanical, electrical, chemical, and industrial sectors. Topics include flash points, fire extinguishers, radioactive substances, pressurized containers, confined spaces, symbols, tags, and signs, along with personal protective equipment (PPE) and safety practices for handling chemicals in laboratories.
ENG 202 (Industrial Supervision):	Industrial Supervision provides students with knowledge and understanding of what industry is and the role of supervision in it. First it discusses the evolution, the meaning and types, the impact of technology, and the factors that influence the location and development of industries in Saudi Arabia. Secondly, it deals with the nature and skills of supervision and functions and responsibilities of supervisors in industries
Basic Industrial Electronics (ELET 201):	Basic Industrial Electronics introduces the student with applications of power electronic devices typically used in industry, including thyristors, DIACs, TRIACs, SCRs, and UJTs and PUTs. The course deals with fundamentals and applications of rectifiers, controllers, converters, and inverters and high power products including heat controls, light controls and power supplies. And also its include the troubleshooting of power supplies.
Digital Electronics 1(ELET 202):	Digital Electronics 1 introduces the basic understanding and application of digital Electronics.

Diploma in Electronics and Communication Technology

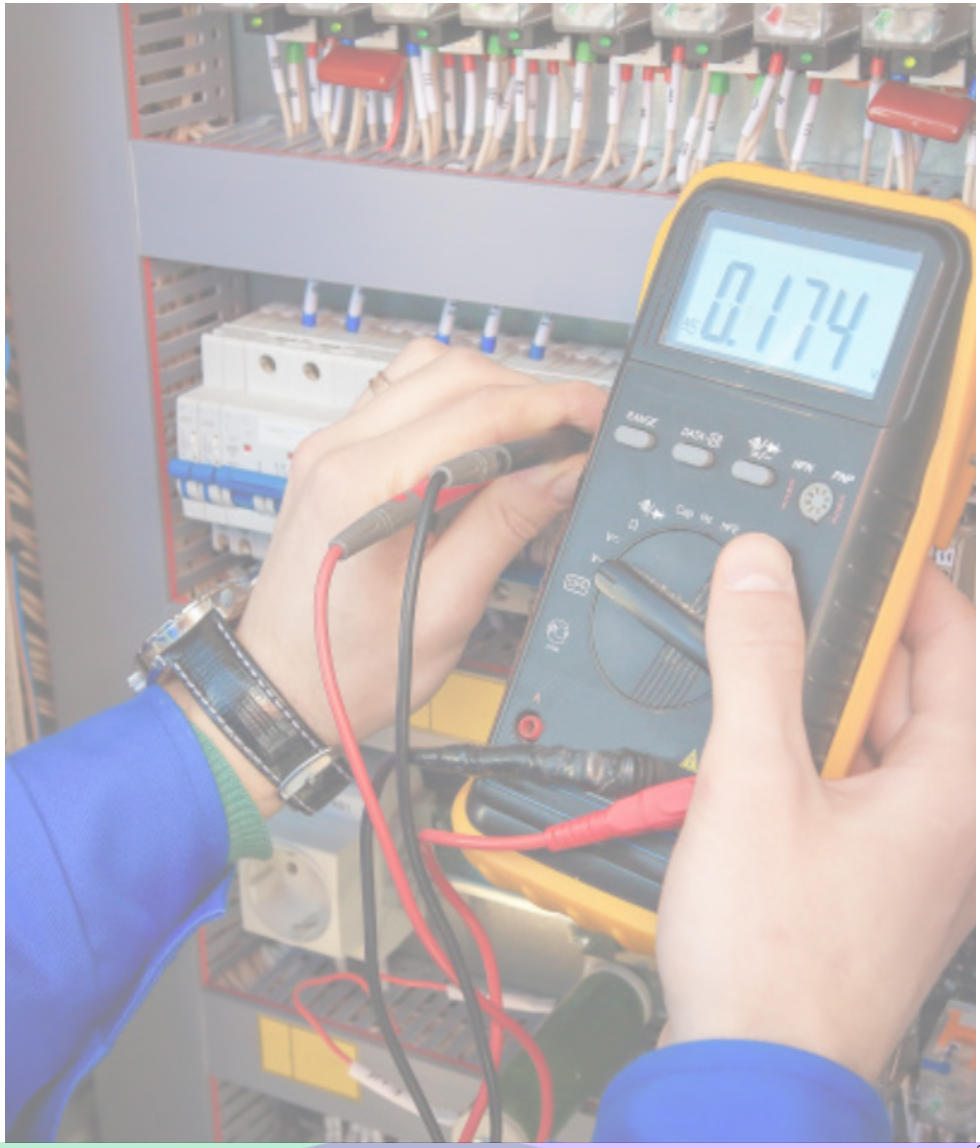
List of Course Description

	and adder, subtractor circuits, Boolean algebra laws and Rules, analyzing the operation of combinational logic circuits and DeMorgan's theorem and K-map method. This course also includes flip flops, construction of flip flops using NAND/ NOR gates. Conversion of flip flops. Also includes shift registers, counters and introduction to basic microprocessor (8085). Laboratory exercises support and clarify class room discussion
Control System Components(ELET 203):	Control System Components covers the basics of process control systems. It provides fundamentals of process control in theory and practical work. It covers various types of control systems, their comparison and applications and includes the study of control system components and auxiliaries used in the industries. Application of control system theory to analyse the control system is given with the help of Simulink software. Description and programming of PLC are also part of this course.
PCB Fabrication (ELET230):	PCB Fabrication provides the students with skills in designing and fabricating a PCB. It deals with the fundamentals of PCB design, layout and fabrication and utilizes computer software and soldering techniques.
Electronics II (ELET 2319):	Electronics II This course introduces students to the basics of linear integrated circuits and applications of op-amp covering integrator, differentiator and comparator. This further includes topics on differential and instrumentation amplifiers, VCO, and generation of non-sinusoidal waveforms. Troubleshooting of Opamp circuits is carried out. The course also covers timers and their applications such as clock and pulse generation, different types of voltage and power amplifiers using FETs. This is a comprehensive electronic course. Emphasis is placed on the principles of operations and applications of these circuits. Laboratory experiments are used to give practical reinforcement of theories dealt with this course.
Technical Report Writing (ENG 201):	Technical Report Writing is a third-semester ESP course designed for students in the final year of the Associate Degree Program. This course solely focuses on writing reports. It aims at developing and enhancing students' ability to plan, draft and produce a wide range of reports used in the professional world, and to improve their effectiveness by incorporating graphics, visuals and other elements.
Microcontroller (ELET 212):	The Microcontroller course acquaints students with basic concepts and functions of microcontroller and its applications. Starting from the basic architecture of microcontroller, various types of hardware blocks and their interconnectivity, serial, parallel and interrupt operations and basic assembly language instructions set are covered in this course. Additionally, design and interfacing examples are also included in the course. Laboratory exercises support and reinforce class instructions.
Digital Electronics II (ELET232):	Digital Electronics II introduces advanced digital circuits and systems to the students. It deals with different digital logic families and their characteristics. Data control devices like encoder, decoder, MUX, DEMUX, comparator, different types of ADCs and DACs, memory devices along with PLDs and digital simulations are also included. Combinational and Synchronous logic systems are analyzed and designed. Laboratory and practical experiments are part of this course.
Analog & digital Communications (ELET 233):	Analog & digital Communications provides the student with an understanding of analog and digital communications signals and systems. The course introduces the transmission and reception of analog signals in amplitude and angle modulations. For digital signals, the modulation schemes include pulse modulation and digital transmission. Laboratory experiments supplement the theory.
Troubleshooting and Maintenance (ELET 234):	Troubleshooting and Maintenance provides the student, theoretical knowledge and practical skills to perform board level and component level troubleshooting using various electronic circuits and systems. The student will be able to apply troubleshooting techniques and step by step procedures to identify, locate the causes of trouble by the logical process of eliminating various alternatives, recognize trouble symptoms in electronic circuits and systems and correct the troubles. The student will be able to identify electronic components, their specifications (data sheet) and test them. The student can test and troubleshoot power supply circuits with a list of

Diploma in Electronics and Communication Technology

List of Course Description

	symptoms and suspected faults. The student will be able to test and troubleshoot analog electronics and communication circuits. The course lab is being done using troubleshooting trainers with fault insertion facility through external toggle switch and by software using computer including Computer Based Laboratory (CBL) system with WinFACET software from LabVolt and Power and Control Electronics System-T7018 with FaultPro Troubleshooting Management Software from Amatrol.
Telecommunication Systems (ELET235):	Telecommunication Systems includes fours topics; The first topic covers comprehensive understanding of the fundamental concepts of the telephone communication systems, their different parts and operation principles. The course analyzes the various switching systems and explains the basic concepts of telephone traffic measurement and also telephone network troubleshooting. The second topic introduce the student to network systems, which includes the fundamentals of protocol architecture & Internet applications and Wide Area Network (WAN). The students will acquire knowledge and skill of network design, troubleshooting and application. The third topic gives the opportunity to the student to deal with RF circuits, Antennas and microwave devices. The students will acquire information and skill of the performance and characteristics of different antennas and how to measure their radiation patterns, beamwidth, gain and directivity. The last topic is an introduction to fiber optics: Analysis, operation, application, and measurements of both characteristics of optic fiber components and signal transmission.
Co-op Training (ELET 320):	Coop Training The coop training program provides an opportunity to practice the acquired knowledge and improve hands on skills. During training, student will perform variety of tasks as directed by the supervisor from company in a real working environment. At the end, the student will prepare a technical report and give a presentation regarding all activities performed during his stay in the industry before the examiners appointed by the college.



Diploma in Instrumentation and Control Technology

Program Description

To provide students with technical knowledge and practical skills that will enable them to work as Instrumentation Engineering technicians in the industry and other organizations related to instrumentation technology.

Program Outcomes

- Demonstrate understanding of the concepts of science, mathematics and Instrumentation and Control engineering technology
- Identify and use appropriate engineering standards, codes and datasheets
- Solve engineering technology problems using conventional practices and standard procedures.
- Design solutions for well-defined technical problems
- Conduct standard tests, measurements, and experiments, and interpret and analyze the results.
- Assist with design of components, systems or processes related to field of Instrumentation and Control engineering technology
- Apply written, oral, and graphical communication in both conventional and non-conventional technical and non-technical environments
- Function effectively as a member of a technical teams
- Demonstrate an ability of self-directed learning and commitment to professional and ethical responsibilities

Study Plan

Diploma in Instrumentation and Control Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
GSPH	101	General Physics	3	3	4		
GSPE	101	Physical Education I	0	2	1		
ELET	101	Electric Circuit I	2	3	3	GSPH 101	
ELET	104	Computer Programming	1	3	2		
			11	**11**	**15**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSCH	101	General Chemistry	3	3	4		
GSMA	102	Calculus II	3	0	3		GSMA 101
ENG	102	English Composition	2	0	2		ENG 101
ELET	102	Electrical Circuits II	2	3	3		ELET 101
ELET	103	Electrical Machines I	2	3	3	ELET 102	ELET 101
ELET	105	Electronics I	2	3	3	ELET 102	ELET 101
			14	**12**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSST	201	Applied Statistics	2	0	2		GSMA 102
ENGT	201	Industrial safety	0	2	1		ENG 102
ELET	201	Basic Industrial Electronics	2	3	3		ELET 105
ELET	202	Digital Electronics I	1	3	2		ELET 105
ELET	203	Control System Components	2	3	3		GSMA 102
ELET	211	Instrumentation Electronics	2	3	3	ELET 203	ELET 105
ELET	241	Process Instrumentation	2	3	3	ELET 203	ELET 105
			11	**17**	**17**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	201	Technical Report Writing	3	0	3		ENG 102
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
ENGT	202	Industrial Supervision	1	0	1		ENG 102
ELET	212	Microcontroller	1	3	2		ELET 104, ELET 202
ELET	242	Process Control Systems	2	3	3		ELET 203, ELET 241
ELET	243	Instrumentation Trouble Shooting & Maintenance	2	6	4	ELET 242, CMET 221	ELET 211, ELET 241
CMET	221	Analytical Instrumentation	1	3	2		ELET 105, GSCH 101
			12	**15**	**17**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ELET	340	Co-op Training (14 Weeks or 560 Hours)	0	40	**3**		Student should finish 67 Crdt.Hrs

Targeted Jobs

- Control Loop Technicians
- Laboratory Technicians
- Assistant Instructors
- Instrument Maintenance Technicians
- Assist engineers

Diploma in Instrumentation and Control Technology

List of Course Description

English Communication (ENG 101):	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA101):	Calculus I deals with the concept of differential calculus needed in mathematics, science, and technology. Topics include limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem-solving sessions.
General Physics (GSPH101):	General Physics is an algebra-based course. The aim of this course is to provide students with basic principles of general physics to support applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE101):	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Electric Circuits I (ELET101):	Electric Circuits I provides the student with an understanding of the concepts and techniques in the characterization of electrical circuits and their components. This course introduces the student to the basic concepts of current, voltage, power, electromagnetism, basic laws, and theorems for the analysis of electric circuits. Students are familiarized
	theorems. Theory classes are supported by laboratory experiments to study, test, and verify the characteristics of these basic electrical concepts.
Computer Programming (ELET104):	Computer Programming introduces techniques to solve problems through computer programming using the high-level computer language 'C'. Students will learn problem-solving techniques, basic programming concepts such as input/output statements and control statements, use of sub-programs, and structured data types such as arrays, pointers, and structures. The course is supported by exercises in the laboratory.
General Chemistry (GSCH101):	General Chemistry is intended to provide students with the knowledge and skills for understanding the basic principles of chemistry. The course covers topics on atomic structure, chemical bonding, gases, thermochemistry, solutions, kinetics, chemical equilibrium, acids and bases, electrochemistry, and modern materials. The course is supported by digital media, both on CDs and online, and by experiments in the laboratory and in virtual chemlab using chemlab software.
Calculus II (GSMA102):	Calculus II deals with the concepts of integral calculus needed in mathematics, basic science, and technology. Topics include integration, techniques of integration, definite integrals and their applications, numerical integration, and differential equations.
English Composition (ENG 102):	English Composition is a second-semester ESP course designed for students pursuing their undergraduate studies in Mechanical, Electrical, Chemical, or Electronic Engineering at Yanbu Industrial College, part of the Colleges and Institutes of the Royal Commission at Yanbu, where the medium of instruction is English. Successful completion of ENG 101 - Communication is a prerequisite for this course. This course is part of the Associate Degree Program and focuses on written technical communication for the workplace. Students are exposed to the fundamentals of technical writing, produce graphs and charts, and participate in group work and effective oral presentations.

Diploma in Instrumentation and Control Technology

List of Course Description

Electrical Circuits II (ELET102):	Electrical Circuits II provides the student with an understanding of concepts of alternating current fundamentals and AC Circuits. The course includes topics related to three-phase systems, filters, two-port networks, and resonance. Practical circuits are analyzed using fundamental electrical laws and theorems to strengthen students' mathematical and analytical capabilities and help them understand and apply concepts in the implementation of these electrical circuits. Theory classes are supported by laboratory exercises to model, simulate, and test electrical circuits.
Electrical Machines I (ELET103):	Electrical Machines I deals with the fundamentals of magnetism, electromagnetism, magnetic circuits, DC electrical machines, and single-phase transformers. This course covers principles of magnetism, magnetic field, and the study of magnetic behavior of ferromagnetic material, B-H curves, and hysteresis. It includes the study of construction, operation, and characteristics of DC machines (generators and motors), starting speed control, and applications of DC motors in industries. The theory, construction, and operation of ideal and practical transformers and autotransformers are also covered, supported by laboratory exercises.
Electronics I (ELET105):	Electronics I provides students with an understanding of the physical properties and principles of operation of some common solid-state devices. It introduces students to bipolar devices such as semiconductors, diodes, and transistors, as well as unipolar devices like junction field-effect transistors. Concepts of ideal op-amp characteristics and basic applications are also included. The course covers basic electronics circuits such as amplifiers, oscillators, and regulated power supplies, supported by laboratory experiments to study, test, troubleshoot, and verify the characteristics of these devices in typical electronic circuits.
Applied Statistics (GSST201):	Applied Statistics deals with statistical concepts and techniques commonly used in data analyses, particularly in science and technology. Topics include data collection and sampling techniques, frequency distributions and graphs, basic statistical probability and counting rules, normal distribution, hypothesis testing, correlation and regression, reliability and failure data analysis, and quality control charts. Application problems will be solved during problem-solving sessions.
Industrial Safety (ENGT201):	Industrial Safety provides students insight into safer workplace practices, hazard recognition, hazard minimization, and risk management. The course covers industrial safety principles and practices in the workplace and environments in the mechanical, electrical, chemical, and industrial sectors. Topics include flash points, fire extinguishers, radioactive substances, pressurized containers, confined spaces, symbols, tags, and signs, along with personal protective equipment (PPE) and safety practices for handling chemicals in laboratories.
Basic Industrial Electronics (ELET201):	Basic Industrial Electronics introduces students to power electronic devices typically used in industry, including thyristors, DIACs, TRIACs, SCRs, UJTs, and PUTs. The course deals with fundamentals and applications of rectifiers, controllers, converters, and inverters, as well as high-power products like heat controls, light controls, and power supplies. Troubleshooting of power supplies is also included.
Digital Electronics I (ELET202):	Digital Electronics I introduces students to the basic understanding and application of digital electronics. It covers logic gates, TTL, number systems, codes, adder/subtractor circuits, Boolean algebra laws and rules, analysis of combinational logic circuits, DeMorgan's theorem, and K-map method. The course includes flip-flops, shift registers, counters, and an introduction to the basic microprocessor (8085), supported by laboratory exercises.
Control System Components (ELET203):	Control System Components covers the basics of process control systems, providing fundamentals in theory and practical work. It covers various types of control systems, their comparisons, applications, and the study of control system components and auxiliaries used in industries. Application of control system theory is explored using Simulink software, and the course includes PLC programming.

Diploma in Mechatronics Technology

Program Description

To provide students with technical knowledge and practical skills that will enable them to work as Mechatronics Engineering technicians and technologists in the industry and other organizations related to Mechatronics technology.

Program Outcomes

•Demonstrate understanding of the concepts of science, mathematics and electrical Mechatronics engineering technology
•Identify and use appropriate engineering standards, codes and datasheets
•Solve engineering technology problems using conventional practices and standard procedures.
•Design solutions for well-defined technical problems
•Conduct standard tests, measurements, and experiments, and interpret and analyze the results.
•Assist with design of components, systems or processes related to field of electrical Mechatronics engineering technology
•Apply written, oral, and graphical communication in both conventional and non-conventional technical and non-technical environments
•Function effectively as a member of a technical teams
•Demonstrate an ability of self-directed learning and commitment to professional and ethical responsibilities.

Targeted Jobs

- Electrical Technician
- Associate load dispatcher
- Transformer inspection
- Assistant electrical supervisor
- Electrical maintenance technician

Study Plan

Diploma in Mechatronics Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
GSPH	101	General Physics	3	3	4		
GSPE	101	Physical Education I	0	2	1		
ELET	101	Electrical Circuits I	2	3	3	GSPH 101	
ELET	104	Computer Programming	1	3	2		
			11	**11**	**15**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSCH	101	General Chemistry	3	3	4		
GSMA	102	Calculus II	3	0	3		GSMA 101
ENG	102	English Composition	2	0	2		ENG 101
ELET	102	Electrical Circuits II	2	3	3		ELET 101
MCET	104	Materials Technology	2	3	3	GSCH 101	
MCET	105	Applied Statics	3	0	3		GSPH 101, GSMA 101
			15	**9**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSST	201	Applied Statistics	2	0	2		GSMA 102
ENGT	201	Industrial safety	0	2	1		ENG 102
ENGT	202	Industrial Supervision	1	0	1		ENG 102
ELET	202	Digital Electronics I	1	3	2		ELET 102
ELET	203	Control System Components	2	3	3		GSMA 102
ELET	103	Electrical Machines I	2	3	3		ELET 102
MCET	212	Fluid Machines	2	3	3		MCET 104
MCET	222	Applied Strength of Materials	2	3	3		MCET 104, MCET 105
			12	**17**	**18**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	201	Technical Report Writing	3	0	3		ENG 102
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
MCET	103	Machining Processes I	2	3	3	ELET 252	
MCET	301	Applied Dynamics	3	0	3		MCET 105
ELET	251	Maintenance and Reliability Engineering in Mechatronics	0	6	2		ENGT 201 ENGT 202
ELET	252	Introduction to Mechatronics System Design	2	3	3	MCET 103	
			12	**12**	**16**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ELET	350	Co-op Training (14 Weeks or 560 Hours)	0	40	3		Student should finish 67 Crdt.Hrs

Diploma in Mechatronics Technology

List of Course Description

English Communication (ENG101):	English Communication is a first-semester ESP course focused on workplace communication for students in the Associate Degree programs at the Royal Commission at Yanbu's colleges and institutes division. This course emphasizes elements of business letters and oral communication basics in professional settings. Students will write claim and adjustment letters and actively engage in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA101):	Calculus I covers differential calculus concepts necessary for mathematics, science, and technology, including limits, continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Application problems are tackled during problem-solving sessions to emphasize continuity, derivatives, and partial derivatives.
General Physics (GSPH101):	General Physics is an algebra-based course that provides students with fundamental physics principles to support applied fields. Topics include measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce theoretical aspects of the course.
Physical Education (GSPE101):	Physical Education teaches calculus concepts needed in mathematics, science, and technology, covering topics like limits, continuity, differentiation, and partial differentiation with an emphasis on applications in continuity and derivatives.
Electric Circuit I (ELET101):	Electric Circuit I introduces students to electrical circuit concepts, focusing on current, voltage, power, electromagnetism, and fundamental laws and theorems. Topics include Ohm's law, KVL, KCL, and basic theorems. Theory is supported by lab experiments for a hands-on study of these electrical concepts.
Computer Programming (ELET104):	Computer Programming focuses on problem-solving using the C programming language. Students learn input/output statements, control statements, and structured data types like arrays, pointers, and structures. The course includes laboratory exercises.
General Chemistry (GSCH101):	General Chemistry gives foundational knowledge in chemistry, covering atomic structure, chemical bonding, gases, thermochemistry, solutions, kinetics, equilibrium, acids and bases, electrochemistry, and modern materials. Labs and virtual chemlabs support this course.
Calculus II (GSMA102):	Calculus II extends integral calculus concepts used in mathematics, science, and technology, covering integration, techniques of integration, definite integrals, numerical integration, and differential equations.
English Composition (ENG102):	English Composition, a second-semester ESP course, follows ENG101 and focuses on written technical communication. Students learn technical writing fundamentals, including producing graphs, charts, and writing technical descriptions.
Electrical Circuits II (ELET102):	Electrical Circuits II covers alternating current fundamentals and AC Circuits, including three-phase systems, filters, and resonance. Students use electrical laws and theorems to analyze circuits, with lab support for modeling and testing.
Materials Technology (MCET104):	Materials Technology explores the manufacture of metals, alloys, and materials like insulating and corrosion-resistant ones. Topics include metallurgy, shaping, forming, casting, plastic molding, heat treatment, and joining techniques, with labs examining material microstructure and properties.
Applied Statics (MCET105):	Applied Statics introduces fundamental mechanics concepts, covering forces, moments, equilibrium, trusses, frames, and motion kinematics. It includes concepts like centroid, center of gravity, friction, and motion kinematics.
Applied Statistics (GSST201):	Applied Statistics teaches data analysis techniques for science and technology applications. Topics include data collection, frequency distributions, central tendency measures, probability, hypothesis testing, correlation, regression, and reliability analysis.

Diploma in Mechatronics Technology

List of Course Description

Industrial Safety (ENGT201):	Industrial Safety trains students in workplace safety practices. It covers industrial safety principles in sectors like mechanical, electrical, chemical, and industrial. Topics include hazard recognition, risk management, and safety regulations.
Industrial Supervision (ENGT202):	Industrial Supervision introduces industrial supervision concepts, exploring its evolution, the impact of technology, and factors influencing industry development in Saudi Arabia. It includes supervisor roles, responsibilities, and skills.
Applied Dynamics (MCET301):	Applied Dynamics covers kinematics and dynamics of particles and rigid bodies. It emphasizes drawing free-body and kinetic diagrams, with work-energy and impulse-momentum principles for motion analysis.
Machining Processes I (MCET103):	Machining Processes I introduces machine shop processes, including cutting tools, lathes, drills, milling, and grinding machines, supported by workshop training for practical skills and safety practices.
Digital Electronics I (ELET202):	Digital Electronics I covers digital electronics basics, including logic gates, TTL, number systems, Boolean algebra, and combinational logic circuits. Topics include flip-flops, registers, counters, and introductory microprocessor knowledge, supported by lab work.
Control System Components (ELET203):	Control System Components covers process control system fundamentals. It introduces control systems, their applications, and Simulink software. PLC programming and practical lab work complement theory.
Electrical Machines I(ELET103):	Electrical Machines I focuses on magnetism, electromagnetism, magnetic circuits, and DC machines. Topics include transformers, autotransformers, and their practical applications, with lab exercises for hands-on learning.
Fluid Mechanics:(MCET212)	Fluid Mechanics covers fluid properties, fluid dynamics, and applications in pipelines and machines like pumps and turbines, with lab activities for practical learning.
Applied Strength of Materials (MCET222):	Applied Strength of Materials teaches material strength, stresses, and strains, covering axial stress, shear, beam and shaft stress, impact stress, and column buckling, with labs on material testing methods.
Technical Report Writing (ENG201):	Technical Report Writing is a third-semester ESP course focusing on report writing skills. Students learn to draft professional reports with visuals and graphics, enhancing effectiveness.
Islamic Ideology and Thoughts (GSIS101):	Islamic Ideology and Thoughts explores Islamic principles and ideology.
Maintenance and Reliability Engineering (ELET251):	Maintenance and Reliability Engineering teaches maintenance, diagnosis, and troubleshooting in mechatronics, with practical workshop training.
Introduction to Mechatronics System Design (ELET252):	Introduction to Mechatronics System Design focuses on creating and maintaining integrated mechatronics systems. Topics include systems engineering, control systems, sensors, actuators, and embedded programming, supported by labs and a course project.
Cooperative Training (ELET350):	Cooperative Training provides hands-on experience in a real work environment, culminating in a technical report and presentation.

Mechanical Engineering Department

Department of Mechanical Engineering (ME) is one of the major academic departments at Yanbu Industrial College (YIC). The Department has established its intermediate diploma degree in Manufacturing Technology Program (MTP) in 1991 and Mechanical Maintenance Technology Program (MMTP) in 1994, based on the huge demand for technical manpower from the industries in the Kingdom of Saudi Arabia.
The department has introduced a BS degree in Mechanical Engineering Technology Program (MCETP) in 2005 as a continuation of the intermediate diploma degree programs. In 2023, a direct admission Bachelor of Science in Mechanical Engineering program is started instead.

Department Goals

• To provide mechanical engineering students with technical education and communication skills to enable them to occupy positions in industry or other related fields.

• To equip mechanical engineering students with technical tools and life-long learning skills to be prepared for a rapidly changing technological environment.

• To instill in mechanical engineering students the needed values, autonomy, and responsibility to be ready to perform their tasks ethically and professionally.

Academic Programs

• **Bachelor** of Science in Mechanical Engineering
• **Diploma** in Mechanical Maintenance Technology
• **Diploma** in Manufacturing Technology

Bachelor of Science in Mechanical Engineering

Program Description

To prepare job-ready graduates to work in the industry or other related fields by providing high-quality education in mechanical engineering.

Program Outcomes

• To provide mechanical engineering students with technical education and communication skills to enable them to occupy positions in industry or other related fields

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• To equip mechanical engineering students with technical tools and life-long learning skills to be prepared for a rapidly changing technological environment.

• To instill in mechanical engineering students the needed values, autonomy, and responsibility to be ready to perform their tasks ethically and professionally.

Targeted Jobs

- Mechanical Engineer
- Project Engineer
- Quality Engineer
- Research Engineer
- Sales Engineer

Study Plan

Bachelor of Science in Mechanical Engineering

1st Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CHEM	101	General Chemistry I	3	3	4		
PHY	101	General Physics I	3	3	4	MA 101	
MA	101	Calculus I	4	0	4		
ESP	101	Introduction to Academic Discourse	3	0	3		
ARB	101	Practical Grammar	2	0	2		
HPE	101	Health and Physical Education	1	0	1		
			16	**6**	**18**		

1st Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
PHY	102	General Physics II	3	3	4	MA 102	PHY 101
MA	102	Calculus II	4	0	4		MA 101
ESP	102	Introduction to Report Writing	3	0	3		ESP 101
ARB	102	Objective Writing	2	0	2		ARB 101
ISL	101	Belief and Its Consequences	2	0	2		
CSE	101	Introduction to Programming	1	3	2		
			15	**6**	**17**		

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	201	Calculus III	3	0	3		MA 102
MA	202	Probability and Statistics for Engineers	3	0	3		MA 102
ESP	201	Academic and Professional Communication	3	0	3		ESP 102
ME	201	Mechanical Engineering Drawing and Graphics	2	0	2		
ME	202	Mechanical Engineering Drawing and Graphics Lab	0	3	1	ME 201	
ME	203	Statics	3	0	3		PHY 101
ME	204	Thermodynamics I	3	0	3		MA 102, PHY 102
			17	**3**	**18**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	203	Elements of Differential Equations	3	0	3		MA 102
CSE	201	Introduction to Data Science	3	0	3		CSE 101, MA 202
ISL	201	Professional Ethics	2	0	2		ISL 101
ME	205	Materials Science and Engineering	3	0	3		CHEM 101, MA 102
ME	206	Materials Science and Engineering Lab	0	3	1	ME 205	
ME	207	Dynamics	3	0	3		ME 203
ME	208	Thermodynamics II	3	0	3		ME 204
			17	**3**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CSE	301	Introduction to Artificial Intelligence	3	0	3		CSE 201
ARB	201	Literary Styles	2	0	2		ARB 102
EE	331	Electrical Engineering Principles and Applications	3	0	3		MA 102, PHY 102
EE	332	Electrical Engineering Principles and Applications Lab	0	3	1	EE 331	
ME	301	Mechanics of Materials	3	0	3		ME 203, ME 205
ME	302	Fluid Mechanics	3	0	3		MA 201, ME 204, ME 207
ME	303	Manufacturing Processes	3	0	3		ME 201, ME 205
ME	304	Manufacturing Processes Lab	0	3	1	ME 303	
			17	**6**	**19**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MA	301	Numerical Methods for Engineers	3	0	3		CSE 101, MA 201
MS	301	Business and Entrepreneurship	2	0	2		ESP 201
ISL	301	Human Right in Islam	2	0	2		ISL 201
ME	305	Machine Design	3	0	3		ME 301
ME	306	Mechanical System Design Lab	0	3	1	ME 305	
ME	307	Heat Transfer	3	0	3		ME 208, ME 302
ME	308	Thermo-Fluid Lab	0	3	1	ME 307	
ME	300	Design Project I	1	3	2		ESP 201, ME 301, ME 302, ME 303
			14	**9**	**17**		

4th Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ME	401	System Dynamics and Control	3	0	3		EE 331, MA 201, ME 208, ME 302
ME	402	Measurements and Control Lab	0	3	1	ME 401	
ME	4xx	Mechanical Engineering Elective I	3	0	3		ME 300
ME	4xx	Mechanical Engineering Elective II	3	0	3		ME 300
ME	4xx	Mechanical Engineering Elective III	3	0	3		ME 300
ME	400	Design Project II	1	3	2		MS 301, ME 305, ME 300
			13	**6**	**15**		

Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ME	403	Composite Materials	3	0	3		ME 300
ME	404	Engineering Design Optimization	3	0	3		ME 300
ME	405	Energy Conservation and Management	3	0	3		ME 300
ME	406	Power Plant Engineering	3	0	3		ME 300

4th Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ME	490	Internship	0	0	6		122 Credits Completion
			0	**0**	**6**		

Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ME	407	Turbomachinery	3	0	3		ME 300
ME	408	Production Planning and Control	3	0	3		ME 300

Bachelor of Science in Mechanical Engineering

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General Chemistry I (CHEM 101):	General Chemistry I (CHEM 101) is a four-hour credit course that introduces students to atomic structure, quantum theory, and the periodic table, chemical bonding, reactions in aqueous solutions, physical properties of solutions, properties of gases, thermochemistry, and electrochemistry.
General Physics I (PHY 101):	General Physics I (PHY 101) is a four-hour credit course that introduces students to the basic's laws, principles, and equations in the field of physics and their applications in real-life scenarios. Students will study laws of motion and their associated concepts and principles, and apply such information to solve problems pertaining to physics. Students will conduct and interpret lab experiments and results while gradually improving their proportional reasoning, estimation abilities, and graphing skills.
Calculus I (MA 101):	Calculus I (MA 101) is a four-hour credit course that emphasizes prime topics of differential calculus, including limits and continuity of functions of a single variable; derivatives, and differentiation techniques. In this course, first (second) order derivatives are applied to problems dealing with related rates, linear approximations, functions' behavior, extreme values, and optimization; the Newtonian method of approximate root calculation; Rolle's and Mean-Value theorems; curve sketching.
Introduction to Academic Discourse (ESP 101):	Introduction to Academic Discourse (ESP 101) is a three-hour credit course. It aims to provide students with the necessary academic reading, writing, and vocabulary skills to produce and critique a variety of discourses. Specifically, students will write process, cause and effect, compare and contrast, and opinion paragraphs about relevant engineering topics. Further, students will be taught the skills to meaningfully engage with several genres such as journal articles, encyclopedias, magazines, newspapers, and other digital genres. Meaningful engagement includes traits as critical understanding, argumentation, causal analysis, and skills such as gathering ideas, drafting, and proofreading different types of texts.
Practical Grammar (ARB 101):	Practical Grammar (ARB 101) is a two-hour credit course that aims at improving students' linguistic production. Students will be introduced to grammatical rules that will enhance the cohesion and coherence of their output. Further, students will analyze text stylistics with the goal of improving text quality.
Health and Physical Education (HPE 101):	Heath and Physical Education (HPE 101) is a one-hour credit course. It aims to provide students with practical exercises for the purpose of enhancing their overall health and physical ability while focusing on necessary aspects of values, autonomy, and responsibility.
General Physics II (PHY 102):	General Physics II (PHY 102) is a four-hour credit course. It introduces the topics of wave motion and sound, temperature, first and second laws of thermodynamics, kinetic theory of gases, Coulomb's law, electric and magnetic fields, Gauss' law, electrical potential, capacitors and dielectrics, and D.C. circuits, Ampere's and Faraday's laws by linking them to everyday life scenarios.
Calculus II (MA 102):	Calculus II (MA 102) is a four-hour credit that is a continuation of Calculus I. This course teaches an introduction to integral calculus. The topics include The Fundamental Theorem of Calculus, techniques of integration of functions of a single variable, arc length, areas, volumes, and improper integration. Sequences and series: convergence tests, integral, comparison, ratio, and root tests. Alternating series. Absolute and conditional convergence. Power series. Taylor and Maclaurin series.
Introduction to Report Writing (ESP 102):	Introduction to Report Writing (ESP 102) is a three-credit hour course. The course aims at enabling students to write a variety of reports that are found in the workplace and academic contexts. Specifically, students will be introduced to the writing of long (formal) and short reports alongside the use of graphical representations and appropriate referencing styles. Further, students will be introduced to the basics of data collection, data exploration and analysis, and data graphical representation.
Objective Writing (ARB 102):	Objective Writing (ARB 102) is a two-hour credit course. The course aims to introduce students to objective writing in essays, reports, assessments, summaries, scientific research, and administrative writing in the Arabic language.
Belief and Its Consequences (ISL 101):	Belief and its Consequences (ISL 101) is a two-hour credit course. The course explains the roots of the right faith, special characteristics of the Islamic faith, Islamic description of the universe, human beings and life, and reasons for increasing the faith.

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Introduction to Programming (CSE 101):	Introduction to Computer Programming (CSE 101) is a two-hour credit course. This course introduces students with basic programming concepts. The topics covered in this course include basic program constructs: variables, assignments, expressions, decision structures, looping, functions, lists, files and exceptions; Introduction to objects and classes, and pointers.
Calculus III (MA 201):	Calculus III (MA 201) is a three-hour credit course that is a continuation of Calculus II. This course explores multi-dimensional calculus. It introduces various topics including parametric equations and polar coordinates, parametric and polar curves in a plane, area in polar coordinates, three-dimensional coordinate systems, vectors, equations of lines and planes, quadric surfaces, functions of several variables, partial derivatives, directional derivatives, extrema of functions of several variables, double integrals in rectangular and polar coordinates, and triple integrals in rectangular coordinates.
Probability and Statistics for Engineers (MA 202):	Probability & Statistics for Engineers (MA 202) is a three-hour credit course that introduces students to the basic applications of probability and statistics in engineering and sciences. It covers topics related to the nature of probability and statistics, frequency distributions and graphs, measures of central tendency, measures of variation, probability and counting rules, random variables and probability distributions, central limit theorem and confidence intervals, hypothesis testing, and correlation and regression.
Academic and Professional Communication (ESP 201):	Academic & Professional Writing (ESP 201) is a three-hour credit course. The course introduces students to oral and written communication applied in academic and professional settings. Students will prepare and deliver presentations and participate in meetings while applying effective communication strategies. Further, students will write memos, letters, meeting minutes, cover letters, and resumes.
Mechanical Engineering Drawing and Graphics (ME 201):	Mechanical Engineering Drawing and Graphics (ME 201) is a two-hour credit course. The course introduces the principles and interpretation of orthographic projections, including auxiliary views, sectional views, dimensioning, and translation of design instructions into detail and assembly drawings. In addition, the course includes engineering drawing conventions and symbols, including weldments, piping and instrumentation diagram symbols, surface finish notation, and a selection of tolerances.
Mechanical Engineering Drawing and Graphics Lab (ME 202):	Mechanical Engineering Drawings and Graphics Lab (ME, 202) is a one-hour credit course. Students are introduced to a computer laboratory to apply principles of orthographic projections, including auxiliary views, sectional views, dimensioning, and translation of design instructions into detail and assembly drawings. In this course, students apply engineering drawing conventions and symbols, including weldments, piping and instrumentation diagram (P&ID) symbols, surface finish notation, and selection of tolerances based on design requirements.
Statics (ME 203):	Statics (ME, 203) is a three-hour credit course. In this course, students introduce to the fundamental concepts and principles of statics. It covers general principles, force vectors, equilibrium of particles, force system resultants, equilibrium of a rigid body, structural analysis, internal forces, friction, the center of gravity and centroid, moment of inertia, and virtual work.
Thermodynamics I (ME 204):	Thermodynamics I (ME 204) is a three-hour credit course. In this course, students are introduced to the concepts and theories of thermodynamics and their applications. The course covers basic concepts, energy, pure substance, closed system, mass, and energy analysis of control volumes. Also, it introduces the concept of the 2'd law of thermodynamics and exergy.
Elements of Differential Equations (MA 203):	Elements of Differential Equations (MA 203) is a three-hour credit course that introduces students to the basics of ordinary differential equations and their applications. The topics introduced include techniques for solving first-order differential equations, such as linear equations, separable equations, exact equations, integrative factors, and homogeneous and non-homogeneous linear differential equations with constant and variable coefficients. Also, it includes higher-order linear differential equations, series solutions, undetermined coefficients, annihilator approach, and reduction of order.
Introduction to Data Science (CSE 201):	Introduction to Data Science (CSE 201) is a three-hour credit course. This course to data science techniques and applications for practical engineering problems. Topics cover statistics, linear algebra, and optimization from a data science perspective.
Professional Ethics (ISL 201):	Professional Ethics (ISL 201) is a two-hour credit course. In this course, students will learn about the concept of ethics, their status in Islam, how ethics related to faith, worship, and relations, management morals, and positive

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	work ethics. Students also will learn about the most important professional violations, and ways of dealing with such violations, and see related examples from the Saudi labor system.
Materials Science and Engineering (ME 205):	Materials Science and Engineering (ME 205) is a three-hour credit course. The course covers the fundamental concepts and theories of materials science and engineering. Topics include atomic structure and interatomic bonding, the structure of crystalline solids, imperfections in solids, diffusion, mechanical properties of metals, dislocations and strengthening mechanisms, failure, phase diagrams, phase transformations, applications and processing of metal alloys, structures and properties of ceramics, applications, and processing of ceramics, and polymer structures, and characteristics, applications, and processing of polymers.
Materials Science and Engineering Lab (ME 206):	Materials Science and Engineering (ME, 206) is a one-hour credit course. This course covers laboratory experiments related to the fundamental concepts and theories of materials science and engineering. The course includes lab experiments such as tensile tests, hardness, fatigue, heat treatment, creep, and impact.
Dynamics (ME 207):	Dynamics (ME, 207) is a three-hour credit course. In this course, students introduce the fundamental concepts and principles of dynamics. It covers the kinematics of particles, force & acceleration, work & energy in particles, impulse & momentum in particles, planar kinematics of a rigid body, and planar kinetics of a rigid body.
Thermodynamics II (ME 208):	Thermodynamics II (ME 208) is a three-hour credit course. The course covers applications of thermodynamics principles to design and optimize thermal systems. Topics include gas power cycles, vapor and combined power cycles, refrigeration cycles, thermodynamics property relations, gas-vapor mixtures and air-conditioning, chemical reactions, and chemical and phase equilibrium.
Introduction to Artificial Intelligence (CSE 301):	Introduction to Artificial Intelligence (CSE 301) is a three-hour credit course. This course introduces students to state of the art of artificial intelligence in the modern world, fundamental issues, searching strategies, knowledge representation & reasoning, basic machine learning, reasoning under uncertainty, and neural networks.
Literary Styles (ARB 201):	Literary Styles (ARB 201) is a two-hour credit course. The course aims to develop the linguistic communication skills that the student needs in their practical and professional career, which contributes to raising their expressive abilities, and competence in mastering communication skills such as speaking delivering, persuading, and good dealing with others.
Electrical Engineering Principles and Applications (EE 331):	Electrical Engineering Principles and Applications (EE, 331) is a three-hour credit course. The course covers electrical engineering fundamentals of and its applications to the mechanical engineering field. Topics include circuit analysis, digital systems, electronics, electric drives, and electromechanical control.
Electrical Engineering Principles and Applications Lab (EE 332):	Electrical Engineering Principles and Applications Lab (EE 332) is a one-hour credit course. This course covers lab experiments for electrical engineering fundamentals and their applications.
Mechanics of Materials (ME 301):	Mechanics of Materials (ME 301) is a three-hour credit course. In this course students introduce to concepts and theories of mechanics of materials. Topics include mainly focused on deformable body mechanics, material behavior, and geometry of deformation.
Fluid Mechanics (ME 302):	Fluid Mechanics (ME 302) is a three-hour credit course. The students are introduced to fluid mechanics concepts and theories and their applications. The topics include an introduction to fluid mechanics, fluid properties, fluid statics, Bernoulli equation and pressure variation, control volume approach and continuity equation, dimensional analysis, and similitude, viscous flow over a flat surface, flow in conduits, drag and lift, compressible flow, flow measurements, and introduction to turbomachinery, flow in open channels and modeling of fluid dynamics.
Manufacturing Processes (ME 303):	Manufacturing Processes (ME 303) is a three-hour credit course. In this course, students are introduced to concepts and principles of manufacturing processes. Topics include an introduction and overview of manufacturing, engineering materials and product attributes, solidification processes, particulate processing of metals and ceramics, metal forming and sheet metalworking, material removal processes, property enhancing and surface processing operations, joining and assembly processes, special processing and assembly technologies, and systems topics in manufacturing.

Bachelor of Science in Mechanical Engineering

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Manufacturing Processes Lab (ME 304):	Manufacturing Processes Lab (ME 304) is a one-hour credit course. This course covers laboratory experiments related to manufacturing processes such as metal cutting, welding, and CAD CAM technology.
Numerical Methods for Engineers (MA 301):	Numerical Methods for Engineers (MA 301) is a three-hour credit course. This course covers topics of roots of equations, systems of linear algebraic equations, numerical differentiation and integrations, interpolation, least squares and regression analysis, numerical solutions of ordinary and partial differential equations, and introduction to error analysis.
Business and Entrepreneurship (MS 301):	Business and Entrepreneurship (MS 301) is a two-hour credit course. This course introduces the basics of business and entrepreneurship. The course focuses on identifying and evaluating business opportunities, developing business plans, and how to finance, fund, and manage a business.
Human Rights in Islam (ISL 301):	Human Rights in Islam (ISL 301) is a two-hour credit course. Through the course, the student will learn about honoring the human being, the concept of human rights and its advantages in Islam, the basic human rights in Islam, and suspicions about human rights in Islam.
Machine Design (ME 305):	Machine Design (ME 305) is a three-hour credit course. In this course, students are introduced to concepts and principles of machine design. Topics include Introduction to mechanical engineering design, materials properties and materials selections, failure theories, design and analysis of a wide variety of machine elements, and special topics in design.
Mechanical System Design Lab (ME 306):	Mechanical System Design Lab (ME 306) is a one-hour credit course. This course covers case studies and practical topics related to machine design, such as using engineering and research tools to study or solve engineering problems.
Heat Transfer (ME 307):	Heat Transfer (ME 307) is a three-hour credit course. In this course, students are introduced to concepts and principles of heat transfer and its applications. Includes Introduction to heat transfer, theories related to different methods of the heat transfer mechanism, and application of heat exchangers.
Thermo-Fluid Lab (ME 308):	Thermo-Fluid Lab (ME 308) is a one-hour credit course. This course covers the laboratory topics related to thermodynamics, fluid mechanics, and heat transfer.
Design Project I (ME 300):	Design Project I (ME 300) is a two-hour credit course. The course is the first part of the capstone design course. The students emphasize initializing a project or a research idea and forming a team to start integrating the gained engineering knowledge and skills in addition to the values to develop a solution or research real-world engineering problems.
System Dynamics and Control (ME 401):	System Dynamics and Control (ME 401) is a three-hour credit course. The course introduces students to system dynamics and controls concepts and principles. The topics covered include an introduction to dynamical systems and control, modeling of engineering systems, standard models for dynamic systems, numerical simulation of dynamic systems, an analytical solution of linear dynamic systems, system analysis using Laplace transforms, frequency-response analysis, an introduction to control systems, and case studies.
Measurements and Control Lab (ME 402):	Measurements and Control Lab (ME 402) is a one-hour credit course. The course covers case studies and practical topics related to system dynamics and control such as using engineering and research tools to study or solve engineering problems.
Design Project II (ME 400):	Design Project II (ME 400) is a two-hour credit course. The course is the continuation of the capstone design course ME 300 Design Project I. The students will progressively implement and complete their projects in this course based on the planned schedule.
Internship (ME 490):	Internship (ME 490) is a six-hour credit course. This course is a period of 12 weeks of industrial employment followed by 2 weeks of overall evaluation.
Composite Materials (ME 403):	Composite Materials (ME 403) is a three-hour credit course. This course introduces students to the basics of Composite Materials. Topics include basic concepts, materials for reinforcements and matrix, micro and macro and ply mechanics, Manufacturing processes, and Failure criteria.

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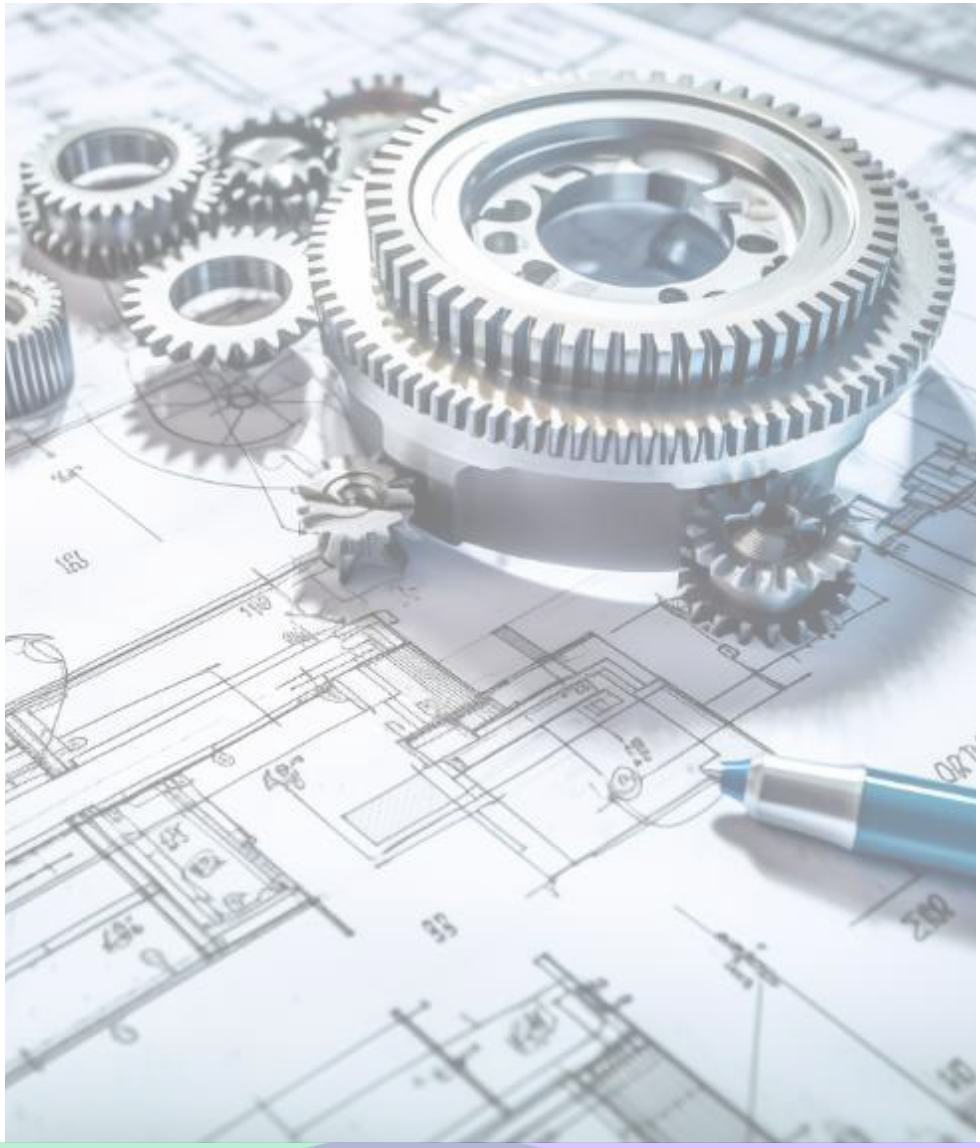
Engineering Design Optimization (ME 404):	Engineering Design Optimization (ME 404) is a three-hour credit course. This course introduces students to concepts and procedures of engineering design optimization. Topics cover the formulation of optimization problems, optimization concepts using the graphical method, optimality conditions for unconstrained and constrained problems, use of engineering tools for optimum design of practical problems, linear programming, and numerical methods for unconstrained and constrained problems.
Energy Conservation and Management (ME 405):	Energy Conservation and Management (ME 405) is a three-hour credit course. The course covers the principles and concepts of energy conservation and management. Topics include energy accounting, energy audit, economics, efficiencies, and environmental aspects of energy sources, renewable energy, and other advanced energy topics.
Power Plant Engineering (ME 406):	Power Plant Engineering (ME, 406) is a three-hour credit course. The course covers the thermal, chemical, economic, and environmental analysis of different thermal power plant technologies.
Turbomachinery (ME 407):	Turbomachinery (ME, 407) is a three-hour credit course. The course introduces students to the principles and concepts of turbomachinery. Topics include the interaction between the working fluid and the structure, efficiencies and losses, and jet propulsions and their applications.
Production Planning and Control (ME 408):	Production Planning and Control (ME 408) is a three-hour credit course. The course covers the principles and concepts of production planning and control. Topics include fundamentals of planning and control, forecasting, sales and operation planning, master scheduling, inventory management, material requirement planning (MRP), and capacity management.



Diploma in Mechanical Maintenance Technology

Program Description

To provide students at intermediate diploma degree level with knowledge that will enable them work as technicians in maintenance technology.

Program Outcomes

- To work successfully at entry-level positions in industries to deliver services and support to both internal and external clients by applying technical knowledge, problem-solving techniques and hands-on skills in traditional and emerging areas of the mechanical maintenance technology and related fields.
- Adapt to changes in technology and proactively apply current knowledge, and problem-solving skills in support of mechanical maintenance and related fields of technology.
- To perform professional activities with integrity and demonstrate a sense of social, ethical and environmental responsibility and skills of effective teamwork and communication applying all safety rules.
- To demonstrate success in their chosen careers through promotion, occupational mobility, and assumption of leadership roles in their organizations and professions.
- Pursue higher education and/or on-job training and certification for career and knowledge advancement in mechanical maintenance technology.

Study Plan

Diploma in Mechanical Maintenance Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
ENGT	101	Engineering Drafting	1	3	2		
GSPH	101	General Physics	3	3	4		
GSPE	101	Physical Education I	0	2	1		
MCET	101	Plant Maintenance	2	3	3	MCET 102	
MCET	102	Mechanical Measurements	1	3	2		
			12	**14**	**17**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSCH	101	General Chemistry	3	3	4		
ENG	102	English Composition	2	0	2		ENG 101
GSMA	102	Calculus II	3	0	3		GSMA 101
MCET	103	Machining Processes I	2	3	3	MCET 104	MCET 102
MCET	104	Materials Technology	2	3	3	GSCH 101	
MCET	105	Applied Statics	3	0	3		GSPH 101, GSMA 101
			15	**9**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSST	201	Applied Statistics	2	0	2		GSMA 102
ENGT	201	Industrial Safety	0	2	1		ENG 102
ELET	104	Computer Programming	1	3	2		
ELET	204	Industrial Electricity	2	3	3		
MCET	201	Mechanical Drafting	1	3	2		ENGT 101
MCET	211	Applied Thermodynamics	2	3	3		MCET 101, MCET 104
MCET	212	Fluid Machines	2	3	3	MCET 211	MCET 101, MCET 104
			10	**17**	**16**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	201	Technical Report Writing	3	0	3		ENG 102
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
ENGT	202	Industrial Supervision	1	0	1		ENG 102
MCET	213	Equipment Maintenance	2	6	4	MCET 214	MCET 211, MCET 212
MCET	214	Heat Exchangers	2	3	3		MCET 211, MCET 212
MCET	2xx	Technical Elective	2	3	3		
			12	**12**	**16**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MCET	310	Co-op Training (14 Weeks or 560 Hours)	0	40	3		Student should finish 67 Credit Hours

Electives 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MCET	217	Refrigeration and Air Conditioning Technology	2	3	3	MCET 214	MCET 212
MCET	219	Hydraulics and Pneumatics Technology	2	3	3		MCET 201, MCET 212
MCET	222	Applied Strength of Materials	2	3	3		MCET 104, MCET 105

Targeted Jobs

- Steel mills technician
- Drafter
- Cement industries technician
- Transportation systems technician
- Mechanical maintenance technician
- Air conditioning systems technician

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English Communication (ENG 101):	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA101):	Calculus I deals with the concept of differential calculus needed in mathematics, science, and technology. Topics include limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem-solving sessions.
Engineering Drafting (ENGT101):	This course is an introduction to technical drawing and computer-aided drafting. The instructional program involves the use of drafting instruments, sketching, lettering, geometric constructions, multiview projections, pictorial drawings, dimensioning, surface development and piping drawings. Internationally recognized drafting standards and conventions are applied throughout the course. The course prepares the students to read and interpret technical drawings and construct engineering drawings by using CAD software.
General Physics (GSPH101):	General Physics is an algebra-based course. The aim of this course is to provide students with basic principles of general physics to support applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE101):	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Plant Maintenance (MCET101):	This course introduces the student to advanced knowledge of mechanical maintenance, functions and techniques, including preventive maintenance, predictive maintenance, non-destructive testing, troubleshooting and fault diagnosis, lubrication, bearing types, sealing, levelling, alignment and installation of mechanical equipment's, maintenance of

English Communication (ENG 101):	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA101):	Calculus I deals with the concept of differential calculus needed in mathematics, science, and technology. Topics include limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem-solving sessions.
Engineering Drafting (ENGT101):	This course is an introduction to technical drawing and computer-aided drafting. The instructional program involves the use of drafting instruments, sketching, lettering, geometric constructions, multiview projections, pictorial drawings, dimensioning, surface development and piping drawings. Internationally recognized drafting standards and conventions are applied throughout the course. The course prepares the students to read and interpret technical drawings and construct engineering drawings by using CAD software.
General Physics (GSPH101):	General Physics is an algebra-based course. The aim of this course is to provide students with basic principles of general physics to support applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE101):	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Plant Maintenance (MCET101):	This course introduces the student to advanced knowledge of mechanical maintenance, functions and techniques, including preventive maintenance, predictive maintenance, non-destructive testing, troubleshooting and fault diagnosis, lubrication, bearing types, sealing, levelling, alignment and installation of mechanical equipment's, maintenance of

Diploma in Mechanical Maintenance Technology

List of Course Description

Materials Technology (MCET104):	This course introduces the principles of manufacture of ferrous and non-ferrous metals and their alloys, thermal insulating, and corrosive resisting materials. The course covers the basics of physical metallurgy, powder metallurgy, shaping, forming, casting, plastic molding, heat treatment processes and joining techniques of industrial materials. Laboratory applications focus on physical microstructure examination of engineering materials. The student receives appropriate practical experience in carrying out heat treatments and the study of their effects on the material, microstructures and mechanical properties.
Applied Statics (MCET105):	This course deals with the fundamental concepts and principles of applied mechanics. It covers force components, moments and couples, and computation of the resultant of coplanar system of forces. It also considers the equilibrium of a particle & rigid body, analysis trusses, frames and machines. It further considers problems related to centroid, centre of gravity& friction. The course also introduces the kinematics of rectilinear and curvilinear motion of particles and rigid bodies, and simple harmonic motion.
Applied Statistics (GSST201):	Applied Statistics deals with statistical concepts and techniques commonly used in data analyses, particularly in science and technology. Topics include data collection and sampling techniques, frequency distributions and graphs, basic statistical measures of central tendency and variability, probability and counting rules, normal distribution, hypothesis testing, correlation and regression, reliability and failure data analysis, and quality control charts. Application problems will be solved during problem-solving sessions.
Industrial Safety (ENGT201):	provide students an insight of safer workplace, and to develop their skills in hazard recognitions, minimization of hazards and risk management. This course will cover in detail the industrial safety principals & practices in the workplace and the environments mainly in Mechanical, Electrical, Chemical and Industrial sectors. Topics include flash point, fire extinguishers, radioactive substances, pressurized containers, confined areas, symbol, tags, signs, the work environment, Personal Protective Equipment (PPE), safety practices of handling chemicals in laboratories, accident prevention, employer safety responsibilities, safety regulations of OSHA and NFP A.
Computer Programming (ELET104):	This course introduces techniques to solve problems through computer programming using high level computer language 'C'. The students will learn problem solving techniques, basic programming concepts such as input/output statements and control statements, use of subprograms and structured data types such as arrays, pointers and structures. The course is supported by exercises in the laboratory.
Industrial Electricity (ELET204):	This course deals with the fundamentals of DC and AC circuits, DC and AC machines and electronic logic control circuits. The first part is devoted to study DC circuits. The second part considers both single phase and three phase AC circuits. DC and AC machines widely used in electric power plants are covered in the third part. Basic principles of semi-conductors and their applications in control circuits are studied in the last part of this course.
Mechanical Drafting (MCET201):	This course is designed to prepare the students to create and interpret working drawings. Topics covered include representation of threaded and non-threaded fasteners, gears, springs, rivets and welded joints. Application of dimensional and geometric tolerances, surface roughness symbols in production drawings is covered. Students are also introduced to the basic concepts of 3D modelling. The media of application varied from standard drafting instruments to the state of the art in computer aided design and drafting tools.
Applied Thermodynamics (MCET211):	This course starts with defining renewable and non-renewable energy sources, types and its applications. It introduces the student to the basic concepts of thermodynamics including pure substance, ideal gas, system, boundary and surrounding. The concepts of the Zeroth, First and Second Law of thermodynamics are introduced. It also discusses thermal engineering system including, heat engines, refrigeration. Students will study the analysis of the thermal systems by applying first and second law of thermodynamics.
Mechanical Drafting (MCET201):	This course is designed to prepare the students to create and interpret working drawings. Topics covered include representation of threaded and non-threaded fasteners, gears, springs, rivets and welded joints. Application of dimensional and geometric tolerances, surface roughness symbols in production drawings is covered. Students are also introduced to the basic concepts of 3D modelling. The media of application varied from standard drafting instruments to the state of the art in computer aided design and drafting tools.
Fluid Machines (MCET212):	The course provides students with an understanding fluid at rest, in motion and interactive forces between fluids and bodies. The course includes applications of fluid mechanics in pipelines and fluid machines such as pumps, turbines and an introduction to compressible fluid machines. The course is also supported by laboratory activities.

Diploma in Mechanical Maintenance Technology

List of Course Description

Technical Report Writing (ENG201):	ENG 201 -Technical Report Writing is a third-semester ESP course designed for students in the final year of the Associate Degree Program. This course solely focuses on writing reports. It aims at developing and enhancing students' ability to plan, draft and produce a wide range of reports used in the professional world, and to improve their effectiveness by incorporating graphics, visuals and other elements.
Islamic Ideology and Thoughts (GSIS101):	This study provides a detailed exploration of Islamic faith, its pillars, and invalidators, along with insights into the Islamic perspectives on family and work ethics. It covers the meaning and concept of faith and how it influences belief, behavior, and actions. The six pillars of faith—belief in Allah, angels, messengers, the Last Day, and divine destiny (Qadar)—are examined for their individual and collective significance. The study also highlights the transformative effect of genuine faith on both individuals and society. Additionally, it addresses the invalidators of faith and contemporary challenges such as secularism and Westernization. The course concludes with an overview of the Islamic family system and the ethical principles governing work in Islam.
Industrial Supervision (ENGT202):	This course provides students with knowledge and understanding of what industry is and the role of supervision in it. First it discusses the evolution, the meaning and types, the impact of technology, and the factors that influence the location and development of industries in Saudi Arabia. Secondly, it deals with the nature and skills of supervision and functions and responsibilities of supervisors in industries.
Equipment Maintenance (MCET213):	This course is designed to equip, and enable the students as mechanical maintenance technicians through the skilled application of engineering knowledge. It provides a comprehensive understanding of predictive maintenance strategy in newly established state-of-the art lab to achieve high plant availability and optimize on product quality. The course covers the basic maintenance techniques such as condition monitoring, vibration analysis, alignment and rotor balancing to eliminate mechanical breakdowns, technical disruptions and equipment failure in a production environment. Hands-on practice for the replacement of dynamic and mechanical seals is performed. The course also covers the applications, troubleshooting and maintenance of different mechanical components and equipment such as valves, pumps, compressors, couplings and gear reducers including fault diagnosis, inspection, dismantling, repair and reassembly.
Heat Exchangers (MCET214):	This course introduces the student technician to the theory of heat transfer (conduction, convection, radiation), heat transmission during evaporation and condensation in heat exchangers; descriptions of heat exchanger type and performance (flow arrangements, logarithmic mean temperature difference and effectiveness), descriptions of some heat exchange applications such as boilers and evaporators, principles of desalination and solar energy applications are included. Laboratory experiments will support the course.
ELECTIVES*	
Refrigeration and Air Conditioning Technology* (MCET217*):	The course is designed to provide student technician with theoretical and practical skills in refrigeration and air conditioning. The course content includes refrigeration principles covering topics of simple and actual vapor-compression cycles, refrigerants, multi-pressures, multi-stage & cascade, and theory and operation of refrigeration components. Air conditioning principles covers the topic of psychrometry, psychrometric processes, and basic load estimations. Fundamental maintenance services and procedures are also included. This course is supported by laboratory exercises.
Hydraulics and Pneumatics Technology* (MCET219*):	This course is directed to study the design, principal of operation and calculation of fluid power systems (hydraulic and pneumatic). In addition, a special attention will be paid to cover the construction, troubleshooting and maintenance of fluid power systems and their industrial applications. Also, the course will cover a good theoretical base of fluid power systems which enables the further study analysis of the static and dynamic performance of different elements of fluid power systems.
Applied Strength of Materials* (MCET222*):	This course deals with the principles of strength, stresses and strains. Problem- solving skills are developed in areas of simple axial stresses, shear stress, stresses in beams, stresses in shafts, impact stresses, combined stresses and buckling of columns. Laboratory experiments cover the area of materials testing; including tension, compression, torsion, bending, shear, impact and hardness.
Co-op Training (MCET310):	The cooperative method of instruction is used to enhance student knowledge and skills and to gain practical experience. For the coop training each student will have a learning plan, signed by the student, instructor, and Coop employer. This plan includes instructional objectives and a list of on the- job and, when applicable, class room learning and experiences. This plan will identify a work station and equipment, skills and tasks relevant to the student's area of specialisation. This training program lasts 14 weeks and is done at the end of the academic program.

Diploma in Manufacturing Technology

Program Description

To provide students at intermediate diploma degree level with the technical skills and knowledge that will enable them work as technicians in all areas of manufacturing technology.

Program Outcomes

- To be recognized as a leading Manufacturing technology intermediate
- Diploma degree program in the country.
- To graduate competent and employable manufacturing technology technicians for local and national industry
- To equip the graduating technicians with the necessary knowledge and skills to continue their studies to a higher level.
- To equip graduating technicians with the necessary skills and competencies required to fulfill the needs of the job market.
- To graduate technicians with an ability to stay current with ever evolving technology.

Targeted Jobs

- Mechanical lab technician
- Drafter
- Machinist
- CNC operator and programmer
- Mechanical maintenance technician
- Quality control technician

Study Plan

Diploma in Manufacturing Technology

2nd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2		
GSMA	101	Calculus I	3	0	3		
ENGT	101	Engineering Drafting	1	3	2		
GSPH	101	General Physics	3	3	4		
GSPE	101	Physical Education I	0	2	1		
MCET	101	Plant Maintenance	2	3	3	MCET 102	
MCET	102	Mechanical Measurements	1	3	2		
			12	**14**	**17**		

2nd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSCH	101	General Chemistry	3	3	4		
ENG	102	English Composition	2	0	2		ENG 101
GSMA	102	Calculus II	3	0	3		GSMA 101
MCET	103	Machining Processes I	2	3	3	MCET 104	MCET 102
MCET	104	Materials Technology	2	3	3	GSCH 101	
MCET	105	Applied Statics	3	0	3		GSPH 101, GSMA 101
			15	**9**	**18**		

3rd Year / 1st Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSST	201	Applied Statistics	2	0	2		GSMA 102
ENGT	201	Industrial Safety	0	2	1		ENG 102
ELET	104	Computer Programming	1	3	2		
ELET	204	Industrial Electricity	2	3	3		
MCET	201	Mechanical Drafting	1	3	2		ENGT 101
MCET	221	Machining Processes II	1	6	3	MCET 222	MCET 103
MCET	222	Applied Strength of Materials	2	3	3		MCET 104, MCET 105
			9	**20**	**16**		

3rd Year / 2nd Sem

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	201	Technical Report Writing	3	0	3		ENG 102
GSIS	101	Islamic Ideology and Thoughts	2	0	2		
ENGT	202	Industrial Supervision	1	0	1		ENG 102
MCET	211	Applied Thermodynamics	2	3	3		MCET 222
MCET	224	Inspection and Quality Control	1	3	2		MCET 201, MCET 222, GSST 201
MCET	226	Welding Technology	1	3	2	MCET 224	MCET 201, MCET 222
MCET	2xx	Technical Elective	2	3	3		
			12	**12**	**16**		

Cooperative Training

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MCET	320	Co-op Training (14 Weeks or 560 Hours)	0	40	3		Student should finish 67 Credit.Hours

Electives 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MCET	223	CAD/ CAM Technology	2	3	3		MCET 201, MCET 221
MCET	225	Tool Design	2	3	3		MCET 201, MCET 222
MCET	227	Sheet Metal Technology	2	3	3		MCET 201, MCET 222

Diploma in Manufacturing Technology

List of Course Description

English Communication (ENG 101):	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA101):	Calculus I deals with the concept of differential calculus needed in mathematics, science, and technology. Topics include limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem-solving sessions.
Engineering Drafting (ENGT101):	This course is an introduction to technical drawing and computer-aided drafting. The instructional program involves the use of drafting instruments, sketching, lettering, geometric constructions, multiview projections, pictorial drawings, dimensioning, surface development, and piping drawings. Internationally recognized drafting standards and conventions are applied throughout the course. The course prepares the students to read and interpret technical drawings and construct engineering drawings by using CAD software.
General Physics (GSPH101):	General Physics is an algebra-based course. The aim of this course is to provide students with basic principles of general physics to support applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE101):	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Plant Maintenance (MCET101):	This course introduces the student to advanced knowledge of mechanical maintenance functions and techniques, including preventive maintenance, predictive maintenance, non-destructive testing, troubleshooting and fault diagnosis, lubrication, bearing types, sealing, leveling, alignment, and installation of mechanical equipment, maintenance of power plants, pump stations, hydraulic and pneumatic systems.
Mechanical Measurements (MCET102):	This course enables the student technicians to gain knowledge and develop their skills using measuring tools and equipment utilizing both the English and S.I. unit systems. The student will learn to measure with rules, tapes, calipers, verniers, micrometers, gauges, indicators, sine bar, and universal protractor. The course is supported by laboratory experiments.
General Chemistry (GSCH101):	General Chemistry is intended to provide students with the knowledge and skills for understanding the basic principles of chemistry. The course covers topics on atomic structure, chemical bonding, gases, thermochemistry, solutions, kinetics, chemical equilibrium, acids and bases, electrochemistry, and modern materials. The course is supported by digital media, both on CDs and online, and by experiments in the laboratory and in virtual chemlab using chemlab software.
Calculus II (GSMA102):	Calculus II deals with the concepts of integral calculus needed in mathematics, basic science, and technology. Topics include integration, techniques of integration, definite integrals and their applications, numerical integration, and differential equations.
English Composition (ENG 102):	English Composition is a second-semester ESP course designed for students pursuing their undergraduate studies in Mechanical, Electrical, Chemical, or Electronic Engineering at Yanbu Industrial College, part of the Colleges and Institutes of the Royal Commission at Yanbu, where the medium of instruction is English. Successful completion of ENG 101 - Communication is a prerequisite for this course. This course is part of the Associate Degree Program and focuses on written technical communication for the workplace. Students are exposed to the fundamentals of technical writing, produce graphs and charts, and participate in group work and effective oral presentations.
Machining Processes I (MCET103):	This course provides the student with an understanding of basic machine shop processes. It deals with the use of cutting tools and procedures, handsaw, contour handsaw, reamers and taps, lathe machines, drilling machines, shaping machines, milling, and grinding machines. The course is supported by workshop training to study the construction and verification of characteristics of these

Diploma in Manufacturing Technology

List of Course Description

	workshop machines, procedures, and their operations in typical machining exercises. Safe working practices will be stressed during all laboratory activities.
Materials Technology (MCET104):	This course introduces the principles of manufacturing ferrous and non-ferrous metals and their alloys, thermal insulating, and corrosive-resisting materials. The course covers the basics of physical metallurgy, powder metallurgy, shaping, forming, casting, plastic molding, heat treatment processes, and joining techniques of industrial materials. Laboratory applications focus on physical microstructure examination of engineering materials. The student receives appropriate practical experience in carrying out heat treatments and the study of their effects on the material, microstructures, and mechanical properties.
Applied Statics (MCET105):	This course deals with the fundamental concepts and principles of applied mechanics. It covers force components, moments, and couples, and computation of the resultant of a coplanar system of forces. It also considers the equilibrium of a particle & rigid body, analysis of trusses, frames, and machines. It further considers problems related to centroid, center of gravity, and friction. The course also introduces the kinematics of rectilinear and curvilinear motion of particles and rigid bodies, and simple harmonic motion.
Applied Statistics (GSST201):	Applied Statistics deals with statistical concepts and techniques commonly used in data analyses, particularly in science and technology. Topics include data collection and sampling techniques, frequency distributions and graphs, basic statistical measures of central tendency and variability, probability and counting rules, normal distribution, hypothesis testing, correlation and regression, reliability and failure data analysis, and quality control charts. Application problems will be solved during problem-solving sessions.
Industrial Safety (ENGT201):	The purpose of this course is to provide students an insight into a safer workplace and to develop their skills in hazard recognition, minimization of hazards, and risk management. This course will cover in detail the industrial safety principles & practices in the workplace and the environments mainly in Mechanical, Electrical, Chemical, and Industrial sectors. Topics include flash point, fire extinguishers, radioactive substances, pressurized containers, confined areas, symbols, tags, signs, the work environment, Personal Protective Equipment (PPE), safety practices of handling chemicals in laboratories, accident prevention, employer safety responsibilities, and safety regulations of OSHA and NFPA. During the progress of the course, students will also be familiar with the different industrial safety procedures, manuals, regulations, specifications, and standards.
Computer Programming (ELET104):	This course introduces techniques to solve problems through computer programming using high-level computer language 'C'. The students will learn problem-solving techniques, basic programming concepts such as input/output statements and control statements, use of sub-programs and structured data types such as arrays, pointers, and structures. The course is supported by exercises in the laboratory.
Industrial Electricity (ELET204):	This course deals with the fundamentals of DC and AC circuits, DC and AC machines, and electronic logic control circuits. The first part is devoted to study DC circuits. The second part considers both single-phase and three-phase AC circuits. DC and AC machines widely used in electric power plants are covered in the third part. Basic principles of semiconductors and their applications in control circuits are studied in the last part of this course.
Mechanical Drafting (MCET201):	This course is designed to prepare the students to create and interpret working drawings. Topics covered include the representation of threaded and non-threaded fasteners, gears, springs, rivets, and welded joints. Application of dimensional and geometric tolerances, surface roughness symbols in production drawings is covered. Students are also introduced to the basic concepts of 3D modeling. The media of application varied from standard drafting instruments to the state of the art in computer-aided design and drafting tools.
Machining Processes II (MCET221):	This course covers advanced machining processes. It deals with a wide range of practical and theoretical work in the area of metal cutting and includes advanced machining operations.
Applied Strength of Materials (MCET222):	This course deals with the principles of strength, stresses, and strains. Problem-solving skills are developed in areas of simple axial stresses, shear stress, stresses in beams, stresses in shafts, impact stresses, combined stresses, and buckling of columns. Laboratory experiments cover the area of materials testing, including tension, compression, torsion, bending, shear, impact, and hardness.

Diploma in Manufacturing Technology

List of Course Description

Technical Report Writing (ENG201):	ENG 201 - Technical Report Writing is a third-semester ESP course designed for students in the final year of the Associate Degree Program. This course solely focuses on writing reports. It aims at developing and enhancing students' ability to plan, draft, and produce a wide range of reports used in the professional world, and to improve their effectiveness by incorporating graphics, visuals, and other elements.
Islamic Ideology and Thoughts (GSIS101):	This study provides a detailed exploration of Islamic faith, its pillars, and invalidators, along with insights into the Islamic perspectives on family and work ethics. It covers the meaning and concept of faith and how it influences belief, behavior, and actions. The six pillars of faith—belief in Allah, angels, messengers, the Last Day, and divine destiny (Qadar)—are examined for their individual and collective significance. The study also highlights the transformative effect of genuine faith on both individuals and society. Additionally, it addresses the invalidators of faith and contemporary challenges such as secularism and Westernization. The course concludes with an overview of the Islamic family system and the ethical principles governing work in Islam.
Industrial Supervision (ENGT202):	This course provides students with knowledge and understanding of what industry is and the role of supervision in it. First, it discusses the evolution, the meaning and types, the impact of technology, and the factors that influence the location and development of industries in Saudi Arabia. Secondly, it deals with the nature and skills of supervision and functions and responsibilities of supervisors in industries.
Inspection and Quality Control (MCET224):	This is an overview course on industrial inspection and quality control methods for manufactured parts. The course covers topics on inspection procedures, the use of standards, specifications, sampling techniques, statistical quality control (SQC), and the construction of the X - and R - control charts. Laboratory activities cover inspection techniques for linear and geometrical tolerances like flatness, squareness, roundness, and the use of inspection gauges and comparators.
Welding Technology (MCET226):	This course is designed to give the student the knowledge and skill in welding technology and weld testing techniques to enable him to function effectively in the industry. Subjects covered include shielded metal arc welding (SMAW), oxy-acetylene welding/cutting (OAW), resistance welding, and soldering & brazing and specialized air-plasma cutting processes. Principles and theory of gas tungsten arc welding (GTAW), semi-automatic process i.e., gas metal arc welding (GMAW) and destructive & non-destructive weld testing techniques are covered together with joint design and welding specification sheets. Safe working practices are stressed throughout the program. All theory is dealt with from first principles and supported by workshop instructions and practices.
Co-op Training (MCET320):	The cooperative method of instruction is used to enhance student knowledge and skills and to gain practical experience. For the coop training, each student will have a learning plan, signed by the student, instructor, and Coop employer. This plan includes instructional objectives and a list of on-the-job and, when applicable, classroom learning and experiences. This plan will identify a workstation and equipment, skills, and tasks relevant to the student's area of specialization. This training program lasts 14 weeks and is done at the end of the academic program.
CAD/CAM Technology (MCET223):	This course provides students training in CAD/CAM software and also in robotic applications. This course introduces the practical applications of CNC machines including programming and operation. Part geometry and the machine codes are created and generated using the CAD/CAM software. Interactive Computer Integrated Manufacturing is introduced to enhance the knowledge and skills in CAD/CAM. Upon completion of this course, the students will be able to use CAD/CAM software to create 2D/3D models and for tool path generation and proper procedure for design and manufacturing.
Tool Design (MCET225):	This course introduces the student to the design of machine tools. It introduces the students to the design process, concepts of factor of safety, and stress concentration. It concentrates on the design of machine tool elements and selection of standard mechanical components. Design of Jigs and fixtures is also introduced. Design exercises and mini projects are to be conducted during the course.
Sheet Metal Technology (MCET227):	This is an advanced course in industrial sheet metal processes. Problems of, shearing, cutting, forming, bending, folding, and fabricating sheet steel as related to the sheet metal industry are considered. Different industrial machine tools and presses used for the fabrication of sheet metals are also covered. Furthermore, friction and lubrication in sheet metal forming and deep drawing of round shapes are covered.

Computer Science and Engineering Department

The Department of Computer Science and Engineering is recognized for its commitment to developing future professionals in the field of technology. It offers undergraduate and diploma programs designed to provide a strong foundation in key areas such as programming, software engineering, networking, artificial intelligence, and data analysis.

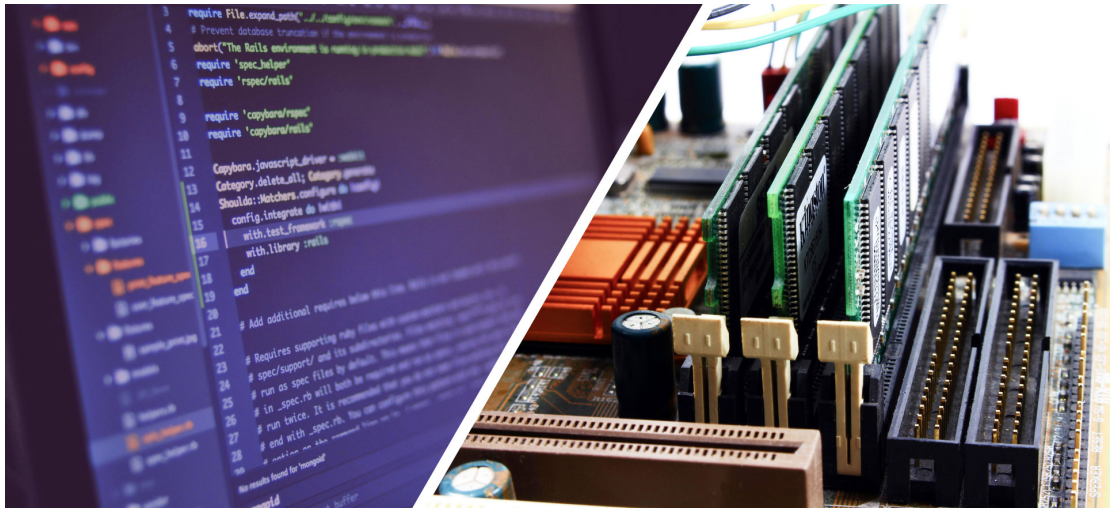
Students enrolled in the department benefit from a curriculum that emphasizes both theoretical understanding and practical application. They have opportunities to engage in collaborative research and innovation alongside experienced faculty, fostering critical thinking and problem-solving skills.

The department promotes a dynamic learning environment that encourages creativity and academic growth. Its programs are structured to support students in achieving both their educational and career goals in the evolving landscape of computer science and engineering.

Prospective students are encouraged to explore the department's offerings and consider the opportunities available for academic and professional development.

Department Goals

- To provide quality education through accredited programs to fulfill local and national wide industry.
- To support well-acquainted graduates with computing skills through established programs, research activities and project development.
- To instill the graduates with high ethical values and commitment for long-life learning.
- Foster the sense of belongingness among students and faculty to attain sustainable progress and growth.



Academic Programs

- **Bachelor** of Science in Computer Engineering
- **Bachelor** of Science in Computer Science
- **Diploma** in Computer Network Technology

Bachelor of Science in Computer Engineering

Program Description

To provide students at prepares students with cutting-edge principles and practices in computer engineering, equipping them to innovate in hardware-software integration and thrive in dynamic fields like robotics, embedded systems, and AI.

Program Outcomes

- Excel in careers by applying their knowledge and skills in computer engineering to solve complex problems, adapt to emerging technologies, and design innovative solutions across various fields.
- Exhibit ethical responsibility and teamwork to make positive impacts on society in multidisciplinary environments.
- Engage in continuous professional development, gaining advanced technical expertise and progress into leadership roles.

Targeted Jobs

- Software Engineer
- Systems Engineer
- Data Analyst
- Application Developer
- Network Engineer
- Artificial Intelligence Specialist

Study Plan

Bachelor of Science in Computer Engineering

1st Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGL	101	English Composition	3	0	3	None	None
MATH	101	Calculus I	4	0	4	None	None
PHYS	101	General Physics I	3	3	4	MATH 101	None
CS	101	Computer Programming	2	3	3	MATH 101	None
ISLM	101	Islamic Ideology	2	0	2	None	None
PE	101	Physical Education I	0	2	1	None	None
Total			**14**	**8**	**17**		

1st Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGL	131	Academic Writing Skills	3	0	3	None	ENGL 101
MATH	102	Calculus II	4	0	4	None	MATH 101
PHYS	102	General Physics II	3	3	4	MATH 102	PHYS 101
CS	102	Object Oriented Programming	3	3	4	None	CS 101
ARAB	101	Functional Grammar	2	0	2	None	None
PE	102	Physical Education II	0	2	1	None	PE 101
Total			**15**	**8**	**18**		

2nd Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MATH	201	Calculus III	4	0	4	None	MATH 102
CS	201	Digital Logic	3	3	4	None	CS 101
CSE	251	Electrical Circuit Analysis	3	3	4	None	MATH 101; PHYS 101
CS	202	Discrete Mathematics	4	0	4	None	MATH 101
ISLM	201	Human Rights In Islam	2	0	2	None	ISLM 101
Total			**16**	**6**	**18**		

2nd Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	204	Data Structures	3	3	4	None	CS 102
ARAB	201	Objective Writing	2	0	2	None	ARAB 101
MATH	204	Linear Algebra & Differential Equation	4	0	4	None	MATH 201
CS	203	Computer Organization & Assembly Language	3	3	4	None	CS 102; CS 201
CSE	252	Electronics	3	3	4	MATH 204	CSE 251
Total			**15**	**9**	**18**		

3rd Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGL	331	Professional Communication	3	0	3	None	ENGL 131
CS	311	Database Systems	2	3	3	None	CS 204
CS	480	Operating Systems	3	3	4	None	CS 203; CS 204
CSE	351	Signals and Systems	2	3	3	None	MATH 204
CSE	361	Introduction to Computer Networks	3	0	3	None	CS 201
ISLM	301	Works Ethics in Islam	2	0	2	None	ISLM 201
Total			**15**	**9**	**18**		

3rd Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGL	332	Technical writing	3	0	3	None	ENGL 131
CSE	371	Introduction to Real Time Embedded Systems	3	3	4	None	CS 203
CSE/ NET	3XX	Track Core I	x	x	4	None	
CSE/ NET	3XX	Track Core II	x	x	3	None	
CSE	354	Principles of VLSI Design	1	3	2	None	CSE 252
ARAB	301	Arab Communication	2	0	2	None	ARAB 201
Total			**9**	**6**	**18**		

3rd Year / Summer Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	492	Begin COOP Work	x	x	**0**	None	Senior Standing
Total			**x**	**x**	**0**		

4th Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	493	COOP	x	x	9	None	CS492
Total			**x**	**x**	**9**		

4th Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CSE	401	Systems Engineering	3	0	3	None	CS 480
STAT	410	Probability and Statistics	3	3	4	None	MATH 102
CS	301	Computer Architecture	3	0	3	None	CS 203
CSE	471	Microcomputer Interfacing and Data Acquisition	2	3	3	None	CS 203; CSE 252
GE	4XX	General Elective	2	0	2	None	
CSE/ NET	4XX	Track Elective I	x	x	3	None	
Total			**13**	**6**	**18**		

Total Credits required to complete the program: 134

Network and Security (Track Core Courses)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
NET	362	Computer Networks I	3	3	4	None	CSE 361
NET	363	Information and Computer Security	3	0	3	None	CSE 361

Digital Systems (Track Core Courses)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CSE	352	Digital Signal Processing	3	3	4	None	CSE 351
CSE	353	Digital System Design	2	3	3	None	CS 203

Network and Security Track Electives (Any One)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
NET	461	Computer Networks II	2	3	3	None	NET 362
NET	462	Network Management	2	3	3	None	NET 362
NET	463	Network Security	2	3	3	NET 461	NET 362; NET 363
NET	464	Wireless Networking	2	3	3	None	NET 362; NET 363
NET	465	IP Telephony	2	3	3	None	NET 362
NET	466	Server Networks	2	3	3	None	NET 362; NET 363
NET	467	Fundamentals of Information Management	3	0	3	None	NET 362; NET 363
NET	468	Storage Networking	2	3	3	None	NET 362; NET 363

Digital Systems Track Electives (Any One)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CSE	451	Digital Image Processing	2	3	3	None	CSE 352
CSE	452	Digital Communication	3	0	3	None	CSE 352
CSE	453	Mobile Communication	3	0	3	None	CSE 352
CSE	455	Advanced Digital System Design	2	3	3	None	CSE 353
CSE	456	Real-Time Systems	3	0	3	None	CSE 371
CSE	457	Connected Embedded Systems Architecture	3	0	3	None	CSE 371

General Electives (Any ONE)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GE	401	Engineering Economics	2	0	2	None	Senior Standing
GE	402	Computing Ethics	2	0	2	None	Senior Standing
GE	403	Project Management	2	0	2	None	Senior Standing
XE	452	Global Issues in ICT	2	0	2	None	Senior Standing

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Functional Grammar (ARAB 101)	Topics covered in this course include: studying chosen parts of Arabic grammar, verbs, the five verbs, nouns that are subject to desinential infliction with letters, derivatives, abrogative, indeclinable, numbers, and hamzah in a practical way with numerous applications
Objective Writing (ARAB 201)	The topics covered in this course include: sources of objective writing, Holly Quran and Hadith and contemporary literature, Punctuation, Report writing, Arabic Dictionaries, Summary style and steps, Scientific research steps and characteristics, Speech, and Curriculum Vitae writing, Objective essay and Administrative letters.
Arabic Communication (ARAB 301)	The topics covered in this course include: the objectives of communication and its elements, skills needed for personal reading, interviews, speeches, lectures, symposia and how to behave as a listener. Tips are given to avoid and prevent common mistakes.
Islamic Ideology (ISLM 101)	This is a course to vitalize the students' knowledge and commitment to Islamic doctrine, seeking thereby to fortify them against the onslaught of godless ideologies. Topics include an introduction to faith, its foundations and sources; the fundamentals of belief: divinity, prophet hood, and after-life; the treatment of different subjects in the Qur'an which deal with the universe, man, relation with other countries and life. The Islamic family system and Islamic society are also studied. Work ethics is major part of the course.
Human Rights in Islam (ISLM 201)	This course discusses the topics of Islamic legislation and its sources, the economics of Islam and its principles, human rights according to the Islamic concept and the five necessities.
Work Ethics in Islam (ISLM 301)	This course discusses the ethical system in Islam, its concept and its effects, as well as studying the ethics of the profession, its sources, its applications, and its relation to other sciences.
English Composition (ENGL 101)	This course aims to teach how to write paragraphs effectively. Using an approach that views writing as a process successfully completed at several stages, the students are trained to write effective paragraphs from editing and revising techniques. The students also learn how to correct fragments and run-ons sentences, structure ideas in sentences clearly and logically using a common checklist.
Academic Writing Skills (ENGL 331)	This course comprises 3 parts; Speaking, Public Speaking and Presentations. It is based on the 3 Ps (presentation, practice and production) approach. The speaking portion aims, through a hands-on approach, at training students in everyday, naturally occurring conversations in both formal and informal settings. The course will progress from personal introductions and everyday conversations to leading meetings and negotiations. The final portion is dedicated to presentations. The focus is on the preparation and delivery of presentations that will interest and inform audience. When opportunities arise, based on students output, phonetic and /or phonological instructions may take place.
Technical Writing (ENGL 332)	In this course, students are introduced to the basic skills of writing a successful technical report that satisfies the requirements of formal writing in English. The course makes use of the students' background knowledge of academic writing in ENGL 101 and ENGL 131 as well as their professional communication skills. By the end of this course, students will be able to produce a unique business report that is plagiarism-free, making use of knowledge and skills obtained in this course and other previous courses.
Physical Education I (PE 101)	This course is designed to provide the students with comprehensive physical fitness program to make them gain the proper physical shape in order to develop the mental, emotional, physical, and social aspects of living, necessary for a happy and productive life. The students will be introduced to the fundamentals of sports such as volleyball game focusing on skills, rules, and game strategy.
Physical Education II (PE 102)	This course provides students with an integrated fitness program in which they can reach a level of fitness that enables them to carry out their daily duties in keeping with their life conditions and the demands of their studies. Through this program, the

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	course equips students with the ability to lead an active life, fatigue-free. In addition, students practice basketball skills and are taught the rules so that they can practice this game properly.
Calculus I (MATH 101)	This course is intended to provide a strong base for three semester calculus sequence, emphasis is given to prime topics of differential calculus including: Limits and Continuity of functions of a single variable; Derivatives; Techniques of Differentiation; Applications of first (second) order derivatives to the problems dealing with related rates, linear approximations, behavior of functions, inflection, extreme values and optimization; Newton's method for approximate roots; Rolle's and Mean Value theorems.
Calculus II (MATH 102)	This course includes: knowledge of the fundamental concepts behind definite and indefinite integration for a function of single variable, i.e. Anti-differentiation, Riemann Sums and the Fundamental Theorem of Calculus, different techniques of integration; applications of definite integral in finding areas, volumes, arc lengths and average values; sequences and series including various tests for convergence; alternating series, absolute and conditional convergence; Maclaurin and Taylor series; power series and its convergence.
Calculus III (MATH 201)	Calculus III, a standard third course in calculus, continues the development of both differential and integral calculus. The first two semesters of the calculus sequence dealt with in two-dimensional Cartesian coordinates. A primary goal of Calculus III is to extend these ideas to three dimensions and to other coordinate systems. Therefore, in this course we introduce: polar coordinates and polar curves; properties of vectors and analytical geometry in three dimensions; functions of several variables; limits and continuity in three-space; partial and directional derivatives, gradients; differentiation and integration of multivariable functions; applications of multiple integrals to area and volume.
Linear Algebra & Differential Equations (MATH 204)	This course contains two parts, linear algebra and differential equations. The first part covers: Linear Systems of equations and their solutions, eigenvalues and eigenvectors, diagonalization of matrix, vector spaces and subspaces, linear combination and independence of vectors, basis and dimension for vector spaces. The second part is a study of differential equations and mathematical models. Topics include: The solution of first order differential equations with real-life applications, the solutions (general and particular) of homogeneous and non-homogeneous second order linear differential equations with constant coefficients.
General Physics I (PHYS 101)	General Physics I is a calculus-based course for computer science and engineering program. It focuses on basic concepts of Physics and their connections to everyday life. The topics covered in this course include the following fields: Measurements, vector analysis, motion in one and two dimensions, force and motion, work, energy and power, rotational dynamics, Conservation laws, equilibrium, elasticity, gravitation, fluid dynamics, and oscillatory motion. The laboratory part of the course reinforces the theoretical aspects of the course, and focuses on collaborative learning, group work and handling of the lab equipment.
General Physics II (PHYS 102)	This course uses calculus based mathematical models to introduce the fundamental concepts of physics. Topics covered include: wave motion and sound, temperature, first and second law of thermodynamics, kinetics theory of gases, coulomb's law, electric field, Gauss' law, electric potential, capacitors and dielectrics, D.C. circuits, the magnetic field, Ampere's, and Faraday's laws. Upon completion, students will be able to understand the principles involved and display analytical problem-solving ability for the topics covered. Laboratory work reinforces the principles discussed in lecture. This course is intended for computer science and engineering students with an interest in the most fundamental of physics concepts.
Computer Programming (CS 101)	This course will introduce students with basic programming concept. The topics covered in this course include: an introduction to basic structured programming skills, basic data types and operators, console input/output, logical expressions, control structures, functions, arrays, pointers, strings, and structures, algorithms and problem solving, problem analysis, solution design, testing, and fundamental of programming constructs. The laboratory work is designed to implement and support the theoretical concepts covered in the lectures.

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Object Oriented Programming (CS 102)	Topics covered in this course include introduction to computer science, simple graphical user interfaces element and design, object-oriented programming concepts, classes, objects, methods, encapsulation, inheritance, polymorphisms, method overloading, exception handling, and constructors and destructors. The lab works are designed to complement the theoretical concepts covered in the lectures through program implementation.
Digital Logic (CS 201)	Study of digital logic with an introduction to Boolean algebra, number systems and coding. Digital functions are implemented using logic gates, flip-flops and other integrated circuits. Emphasis is on analysis and design, including timing and gate level minimization techniques for combinational and sequential circuits. Coverage includes decoders, encoders, multiplexers, demultiplexers, latches, flip-flops, registers and counters, ROM and RAM memory. Students are exposed to implementing complex designs using a Hardware Description Language and FPGAs
Discrete Mathematics (CS 202)	This course introduces the foundation of discrete mathematics as they apply to computer science. Topics covered will include basic mathematical notions of sets and functions; logic, propositional logic, truth tables, issues of equivalence; predicate logic; proof techniques; commonly occurring mathematical concepts such as graphs, trees; representational issues; recursion; counting; combinatorics.
Computer Organization and Assembly Lang. (CS203)	The coverage of topics are the Basics of Computer Organization, Performance evaluation and Fundamentals of Computer architecture and Assembly language programming. Other Topics include Computer arithmetic, CPU organization; Data and Control path design, Pipelining, Memory system with Cache and I/O Organization.
Data Structures (CS 204)	This course is designed to provide the students with solid foundations in the basic concepts of programming: data structures and algorithms. Topics to cover include: Abstract Data Types (ADTs), Arrays, Records, Data representation in memory; Static, stack, and heap allocation, Linked structures, Implementation strategies for stacks, queues, and hash tables, Implementation strategies for graphs and trees, Strategies for choosing the right data structure.
Computer Architecture (CS 301)	Elements of computer system design. Topics include the design of high-performance computer systems. Advanced computer arithmetic, dynamic and speculative execution, exceptions, memory hierarchy design; multilevel caches, virtual memory, Storage and I/O. Multicores, multiprocessors, and clusters.
Database Systems (CS311)	This course is designed to teach the fundamental concepts of database design and its use. It provides a study of data model, data description languages, and query facilities using SQL, project requirement, ERD diagram, functional dependency, data normalization and optimization, a review of transactions, backup and recovery concepts. The knowledge of above topics will be applied in the design and implementation of database application using a targeted DBMS as part of a semester-long project.
Operating Systems (CS 480)	This is an introductory course on the internal operations and fundamental principles of operating systems (OS). Topics covered in this course include: Operating system History and overview. Operating system design principles. Concurrency, Synchronization, Scheduling and Dispatch, Memory management, device management, security and protection, and File systems.
Electrical Circuit Analysis (CSE 251)	This course teaches the basic concepts of circuit elements such as independent and dependent voltage and current sources, resistors, capacitors, inductors. It also teaches KVL and KCL, Mesh and Nodal Circuit analysis. Network Theorems. Analysis and design of RC, RL, and RLC electrical networks. Sinusoidal steady state analysis of passive networks using Phasor representation; mesh and nodal analyses.
Electronics (CSE 252)	This course will cover basic PN junction theory of operation, diodes, diode applications, circuit models and analysis; BJT's and models, MOSFETS and models and circuit analysis; Common emitter amplifiers, common collector amplifiers, two stage amplifiers and simulations; operational amplifiers, comparators, summers, integrator/differentiator, voltage regulator, internal structure of DTL/TTL and CMOS logic families.
Signals and Systems (CSE 351)	The course presents and integrates the basic concepts for both continuous-time and discrete-time signals

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	and systems. Topics included in this course are Signals and systems, Linear Time-Invariant Systems, Fourier series representation of Periodic signals, continuous time Fourier transform, discrete-time Fourier transform; time and frequency characterization of signals and systems, Sampling, and other transform techniques.
Principles of VLSI Design (CSE354)	Review of semi-conductor physics, nMOS, pMOS and CMOS inverter analysis, fabrication of VLSI MOS circuits, circuit optimization, SRAM, DRAM, ROM, layout design rules, Hardware Description Languages (HDL), use of CAD for modeling, layout, simulations and logic synthesis, timing/delay analysis, power considerations, design flow for ASIC's and FPGA's.
Introduction to Computer Networks (CSE361)	This is an introductory course on computer networking. The course explains Internet, the network topology, performance, security, and protocols. Layered protocol. Application Layer - principles of network applications, application layer protocols and client-server and P2P applications. Transport Layer – connectionless transport (UDP), connection-oriented transport (TCP), reliable data transfer, flow and congestion control. Network layer - Internet protocol (IP), routing algorithms, L3 addressing, routing in the Internet. Data link layer-error control, flow control, multi access control, L2 addressing and local area networks. Fundamental concepts wireless and mobile computing, it also discusses concepts and the "building blocks" of today's data communication networks.
Introduction to Real-Time Embedded Systems (CSE371)	This course contains introduction of real-time, embedded systems. Hardware topics include microcontrollers and its peripherals, as well as interfacing several I/O devices (e.g., servo and stepper motor control etc.). Software topics focus on unique aspects of embedded programming and include interrupts, real-time control, and communication. The course also explores the unique tools that are used to develop and test/debug embedded system design.
Systems Engineering (CSE 401)	Computer Systems engineering is about processes required to implement a computer system (Hardware & Software). Students will be taught different components of a system, nature of the life cycle, the roles and aspects of requirement specification. They
	will learn system specification, configuration management, different testing methods, maintenance techniques and processes. Finally, they will get acquainted with the project management processes with emphasis to quality assurance, environment, legal and ethical issues.
Microcomputer Interfacing & Data Acquisition (CSE 471)	Data acquisition and control systems, sampling theorem, data collection fundamentals. Hardware for data acquisition systems, multiplexers, analogue to digital conversion. Principles of modeling, interfacing and signal conditioning of sensors and actuators. Interfacing parallel and serial Communication.
Senior Design Project I (CSE 441)	This course is phase one preparation for completing a design for project. The course requires the students to work in small team to design, develop and implement a computer engineering related problem in conjunction with a faculty advisor. The course reinforces principles of the software/hardware design and development process and serves as the capstone to the computer engineering degree program.
Senior Design Project II (CSE 442)	This course is phase two for completing a design for project. The course requires the students to work in small team to design, develop and implement a computer engineering related problem in conjunction with a faculty advisor. The course reinforces principles of the software/hardware design and development process and serves as the capstone to the computer engineering degree program.
Begin COOP work & COOP (CSE 492 & CSE 493)	A continuous period of 28 weeks spent in industry with the purpose of acquiring practical experience in different areas of Computer Engineering. The period starts with an orientation course in one semester and then follows with the COOP course in the second semester. During this period, a student is exposed to the profession of Computer Engineering by working in the field. Students are required carry a major design project and to submit a final report and give a presentation about the experience and the knowledge they gained during their cooperative work.
Computer Network I (NET 362)	This course provides an overview on LAN (Local-Area Network) and WAN (Wide-Area Network) switching technologies. Hierarchical 3 layer network model (Access, Distribution and Core). The course then focuses on the Ethernet LAN switching, VLAN,

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	VTP, spanning tree, trunking and port security. WAN technologies, including concepts of Leased lines, PPP, ISDN, Frame relay, HDLC, ATM. Static and Dynamic Routing protocols. Mutual redistribution of Routing Protocols. Packet filtering, First Hop Redundancy Protocol (FHRP). The course material is supplemented with extensive lab component to give hands-on experience on network design, switching and routing techniques, and end-to-end communication setup and troubleshooting.
Information and Computer Security (NET 363)	This course provides an overview on history and examples of computer crime, security definitions and basic security principles. Covers security policies, procedures, risk assessment and mechanisms. Access control models. Implementation and usability issues. Physical and Infrastructure security. Authentication technologies. Operating system security. Encryption algorithms and protocols. External and internal firewalls. Software flaws and malware. Application, data, and host security, cryptography, Ethical issues in computer security. The course also emphasizes by incorporating ethical considerations and analyzing the societal, cultural, and economic impacts of computing solutions both locally and globally.
Computer Network II (NET 461)	This course covers advance topics in switching, Interior Gateway Protocols (IGP), Board gateway Protocol (BGP). It includes discussion on IP Multicasting, PIM-DM and PIM-SM protocols in detail. Multimedia Networking, internet technologies, Network services, Network security, Cloud Computing and Virtualization. The course also introduces wireless/Mobile Networks, (cellular networks, Wi-Fi, Mesh, mobility management) and further discussion on IP services such as HSPR, VRRP, IP accounting, Turbo ACL, DRP, CEP and DHCP. Student will achieve troubleshooting skills and problem solving techniques related to routing and switching.
Network Management (NET 462)	The course is introduced with an overview of Network Management models such as the OSI, TMN, and IETF. The course then focuses on the TCP/IP-based Internet Management including SNMP protocol, Structure of Management Information (SMI), Management Information Base (MIB), and Agent Architectures. The course introduces and discusses the advanced topics such as Distributed Network Management and Policy-Based Network Management. The course requires students to engage in detailed study of the SNMP protocol, IETF proposed standard MIBs such as the MIB-II, SNMPv3 MIBs including VACM, USM, Target, and Notification MIBs, Distributed Management MIBs, and RMON2. Students will be introduced to SNMP Agent/MIB implementation using an open source extensible agent toolkit such as the Net-SNMP as part of their individual/group course project. Students are expected to apply the knowledge gained from this course to specify, design, and implement management models and agent architectures to monitor and manage networks, devices, and/or applications. The course material is supplemented with extensive lab component. The laboratory work is designed to implement and support the theoretical concepts covered in the lectures.
Network Security (NET 463)	This course covers the basic concepts in network security. It first introduces the security features within an enterprise network. These include device-level security and the use of firewall. The course then studies the techniques of providing privacy, data integrity, and authentication using encryption, message digest, and digital signature and certification. The course also concentrates on IPSec and the use of IPSec to setup a secure Virtual Private network (VPN). Other topics include wireless security, email security and Intrusion Detection. The course material is supplemented with extensive lab component.
Wireless Networking (NET 464)	The course covers fundamentals of wireless network technologies, topics such as various wireless spectrums, wireless communication topics, signal propagation, antenna technologies, and Physical and MAC layer protocols. The course focuses on Wireless Personal Area Network (WPAN) technologies such as Bluetooth and ZigBee, and Wireless Local Area Network (WLAN) technologies such as WiFi and HIPERLAN and Cellular technology concepts, Wireless Ad-hoc technologies, covering: Wireless Mobile Ad-Hoc Networks (MANET), Wireless Mesh Networks (WMN), Wireless Sensor Networks (WSN) and Independent wireless technologies such as Satellite and RFID. The course material is supplemented with extensive lab component.
IP Telephony (NET 465)	This course covers the concepts and designs of multimedia networks. First it introduces Voice over IP (VoIP) network architecture, voice coding, and the

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	configurations of voice interfaces and voice dial peers. Next it investigates the Quality of Service (QoS) techniques in VoIP. These techniques include admission control, traffic policing, traffic shaping, and various queuing disciplines. Then it focuses on VoIP technology and related protocols, such as RSVP, Differentiated Service, and Real-Time Transport Protocol (RTP). Finally, the course will concentrate on various multimedia signaling protocols, including H.323, Session Initiation Protocol (SIP), and Media Gateway control Protocol (MGCP). The course material is supplemented with extensive lab component.
Server Networks (NET 466)	The Server Networks course will first explore the types and approaches to data center virtualization. It will look at virtualization methods of CPU, memory, storage and network. It will further explore the details and policies for network virtualization and interconnection of virtualized data centers with physical networks. In order to have a complete picture of an enterprise-level data center, it will also look at the shared storage, backup and network security requirements. Finally, the delivery mechanisms of the computing resources and services to the end-user as well as the concepts of utility computing and the Cloud Computing will be discussed. The course material is supplemented with extensive lab component.
Fundamentals of Information Management (NET 467)	This course is designed to define the role of information systems in organizations, and in particular the roles of IS staff and end-users in developing and maintaining computer systems. The managerial aspects and implications of databases, telecommunications, hardware, software and e-commerce are included. Special attention is given to organizational setting including: transaction processing, operational reporting, decision support systems and executive information systems. The course prototypically includes analysis of real world business cases.
Storage Networking (NET 468)	The course objective is to explore the design and configuration of intelligent storage systems interconnected in SAN infrastructure. The prevailing SAN configurations based on the Fiber Channel protocol will be studied in the context of Cisco Systems and Brocade implementations. Once the students have a good grasp of the fundamental storage technologies, the attention will be shifted to
	the advanced SAN traffic engineering and management topics. We will investigate the new SAN development trends driven by the data center virtualization and cloud computing, explore the storage and data networks relationship, and look into the storage virtualization techniques and performance objectives. The concepts covered in class will be reinforced with the laboratory exercises using Cisco, Brocade, Qlogic and EMC devices. The course material is supplemented with extensive lab component.
Digital Signal Processing (CSE 352)	Sampling and reconstruction of signals; z – transform and its application to Analysis of LTI systems, DFT Applications, FFT, Implementation of Discrete-Time systems, Filters structures IIR filter design and FIR filter design. Application on audio and image processing.
Digital System Design (CSE 353)	This course covers topics in the advanced design and analysis of digital circuits with HDL. The primary goal is to provide in depth understanding of logic and system design, synthesis, and optimization for area, speed and power consumption. The course enables students to apply their knowledge for the design of advanced digital hardware systems with corresponding EDA tools. HDL will be used for simulation and synthesis.
Digital Image Processing (CSE451)	Topics include Digital image modeling and representation. Image formation: scanning, digitization, sampling, quantization, etc. Transforms and operations on images. Enhancements, smoothing, and reconstruction techniques. Restoration and filtering methods. Segmentation: edge and boundary detection, feature extraction. Compression and encoding. Color & multi- image processing. Applications: Multimedia, videoconferencing, computer vision, etc.
Digital Communication (CSE 452)	Topics include basic digital passband modulation ASK, PSK, FSK, QPSK, OPSK and MSK. Multiple Access Techniques: FDMA, TDMA, CDMA and OFDMA, Spread Spectrum: FHSS, DSSS and CDMA of DSSS. Error-control coding: Redundancy for error correction, Linear block codes, cyclic codes and convolutional codes.
Mobile Communication (CSE 453)	This course gives an overview of wireless networking, which includes an introduction to

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	wireless physical characteristics and mobility. It discusses signal propagation, wireless channel characteristics, coding and modulation and multiplexing techniques. It discusses cellular networks with the system-level details of GSM and GPRS. It also gives an overview of the architecture of 3G system – UMTS. It discusses the need for specialized MAC for wireless, and MAC protocols for 802.11, WiFi, and GPRS. It covers IEEE 802.11 standard in sufficient detail. Mobility is an important characteristic of cellular and wireless LAN networks. The course describes Mobile IP. Ad Hoc and Sensor Networks are also discussed.
LTE Communication (CSE 454)	This course introduces the technology used by 3GPP Long Term Evolution, both the techniques used for radio communication between the base station and the mobile phone, and the techniques used for signaling communication and data transport in the evolved packet core.
Advanced Digital System Design (CSE 455)	Hierarchical modular design of digital systems, design modeling with a hardware description language, functional and timing simulation of digital systems, implementation in programmable logic devices and field-programmable gate arrays, formal verification, fault models and testing. Designs are developed, simulated and implemented in field-programmable gate arrays in laboratory sessions.
Global Issues in ICT (XE 452)	This course on ICT (Information and Computer Technology) is designed as a social/general elective for MIS, CS and CE undergraduate level students. It provides a comprehensive treatment of the issues faced by computer professionals in today's modern working environment reflecting the latest trends and technologies, with a socio-technological perspective. It focuses on the work of few individuals that has an impact on many people world-wide. By knowing these factors, managers can make a rational choice among options that are effective and economical. The course covers issues in which students may and/or will face as members of a technological society, relevant to the wider group of users, and citizens as well as professionals in computer-related fields.

Bachelor of Science in Computer Science

Program Description

Prepares students with modern principles and practices in computer science, enabling them to adapt to evolving technologies and pursue diverse roles in the field.

Program Outcomes

•Excel in careers by applying their knowledge and skills in computer science to solve complex problems, adapt to emerging technologies, and contribute to innovative solutions across various fields.

•Exhibit ethical responsibility and teamwork to make positive impacts on society in multidisciplinary environments.

•Engage in continuous professional development, gaining advanced technical expertise and progress into leadership roles.

Targeted Jobs

- Software Engineer
- Web Developer
- IT Project Manager
- Information Security Specialist
- Data Analyst
- Network Engineer

Study Plan

Bachelor of Science in Computer Science

1st Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGL	101	English Composition	3	0	3	None	None
MATH	101	Calculus I	4	0	4	None	None
PHYS	101	General Physics I	3	3	4	MATH 101	None
CS	101	Computer Programming	2	3	3	MATH 101	None
ISLM	101	Islamic Ideology	2	0	2	None	None
PE	101	Physical Education I	0	2	1	None	None
Total			**14**	**8**	**17**		

1st Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGL	131	Academic Writing Skills	3	0	3	None	ENGL 101
MATH	102	Calculus II	4	0	4	None	MATH 101
PHYS	102	General Physics II	3	3	4	MATH 102	PHYS 101
CS	102	Object Oriented Programming	3	3	4	None	CS 101
ARAB	101	Functional Grammar	2	0	2	None	None
PE	102	Physical Education II	0	2	1	None	PE 101
Total			**15**	**8**	**18**		

2nd Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	202	Discrete Mathematics	4	0	4	None	MATH 101
CS	201	Digital Logic	3	3	4	None	CS 101
CS	204	Data Structures	3	3	4	None	CS 102
MATH	204	Linear Algebra & Differential Equation	4	0	4	None	MATH 102
ARAB	201	Objective Writing	2	0	2	None	ARAB 101
Total			**16**	**6**	**18**		

2nd Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	203	Computer Organization & Assembly Language	3	3	4	None	CS 201; CS 102
CS	311	Database Systems	2	3	3	None	CS 204
CS	277	Principles of Software Engineering	3	0	3	None	CS 204
ISLM	201	Human Rights in Islam	2	0	2	None	ISLM 101
MATH	206	Numerical Analysis	3	0	3	None	MATH 204
ENGL	331	Professional communication	3	0	3	None	ENGL 131
Total			**16**	**6**	**18**		

3rd Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ARAB	301	Arabic Communication	2	0	2	None	ARAB 201
CSE	361	Introduction to Computer Networks	3	0	3	None	CS 201
CS	378	Introduction to Web Development	2	3	3	None	CS 311
CS	360	Programming Languages	2	3	3	None	CS 102
CS	379	Software and Interface Design	2	3	3	None	CS 277
STAT	410	Probability & Statistics	4	0	4	None	MATH 102
Total			**15**	**9**	**18**		

3rd Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	331	Artificial Intelligence	2	3	3	None	CS 202; STAT 410
CS	xxx	Track Elective I	x	x	3	None	
CS	xxx	Track Elective II	x	x	3	None	
CS	302	Design & Analysis of Algorithms	3	0	3	None	CS 204
NET	363	Information & Computer security	3	0	3	None	CSE 361
ENGL	332	Technical writing	3	0	3	None	ENGL 131
Total			**11**	**3**	**18**		

3rd Year / Summer Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	492	Begin COOP Work	x	x	**0**	None	Senior Standing
Total			**x**	**x**	**0**		

4th Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	493	COOP	x	x	9	None	CS492
Total			**x**	**x**	**9**		

4th Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	401	Computer Architecture & Parallel	3	0	3	None	CS 203
CS	480	Operating SystemsComputing	3	3	4	None	CS 203; CS 204
ISLM	301	Work Ethics In Islam	2	0	2	None	ISLM 201
CS	xxx	Track Elective III	x	x	3		
CS/CSE	xxx	Department Elective	x	x	3		
MATH	xxx/X	MATH / Science Elective	x	x	3		
Total			**8**	**3**	**18**		

Total Credits required to complete the program: 134

Web Engineering Track Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	381	Web Application Development	2	3	3	None	CS 378; CS 379
CS	382	Object Oriented Web App Development	2	3	3	None	CS 378; CS 379
CS	383	Enterprise Web Application Development	2	3	3	None	CS 381; CS 382

Mobile Computing Track Electives

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	385	Mobile Application Development I	2	3	3	None	CS 378; CS 379
CS	386	Introduction to developing Hybrid Web Mobile Applications	2	2	3	None	CS 378; CS 379
CS	387	Mobile Application Development II	2	3	3	None	CS 385; CS 386

Math / Science Electives (Any ONE)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
MATH	401	Operational Research Techniques	3	0	3	None	Senior Standing
MATH	402	Modeling & Simulation	3	0	3	None	Senior Standing
MATH	403	Theory of computation	3	0	3	None	Senior Standing
MATH	203	Finite Mathematics	3	0	3	None	Senior Standing
MATH	201	Calculus III	4	0	4	None	MATH 102

Department Electives (Any ONE)

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
CS	376	Computer Graphics	3	0	3	None	MATH 204; CS 102
CS	471	Special Topics in Computer Science 1	3	0	3	None	Senior Standing
CS	472	Special Topics in Computer Science 2	3	0	3	None	Senior Standing
CS	411	Advance Database	3	0	3	None	CS 311
CS	473	Software Requirement Engineering	3	0	3	None	CS 277
CSE	353	Digital System Design	2	3	3	None	CS 203

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Functional Grammar (ARAB 101)	Topics covered in this course include: studying chosen parts of Arabic grammar, verbs, the five verbs, nouns that are subject to desinential infliction with letters, derivatives, abrogative, indeclinable, numbers, and hamzah in a practical way with numerous applications
Objective Writing (ARAB 201)	The topics covered in this course include: sources of objective writing, Holly Quran and Hadith and contemporary literature, Punctuation, Report writing, Arabic Dictionaries, Summary style and steps, Scientific research steps and characteristics, Speech, and Curriculum Vitae writing, Objective essay and Administrative letters.
Arabic Communication (ARAB 301)	The topics covered in this course include: the objectives of communication and its elements, skills needed for personal reading, interviews, speeches, lectures, symposia and how to behave as a listener. Tips are given to avoid and prevent common mistakes.
Islamic Ideology (ISLM 101)	This is a course to vitalize the students' knowledge and commitment to Islamic doctrine, seeking thereby to fortify them against the onslaught of godless ideologies. Topics include an introduction to faith, its foundations and sources; the fundamentals of belief: divinity, prophet hood, and after-life; the treatment of different subjects in the Qur'an which deal with the universe, man, relation with other countries and life. The Islamic family system and Islamic society are also studied. Work ethics is major part of the course.
Human Rights in Islam (ISLM 201)	This course discusses the topics of Islamic legislation and its sources, the economics of Islam and its principles, human rights according to the Islamic concept and the five necessities.
Work Ethics in Islam (ISLM 301)	This course discusses the ethical system in Islam, its concept and its effects, as well as studying the ethics of the profession, its sources, its applications, and its relation to other sciences.
English Composition (ENGL 101)	This course aims to teach how to write paragraphs effectively. Using an approach that views writing as a process successfully completed at several stages, the students are trained to write effective paragraphs from editing and revising techniques. The students also learn how to correct fragments and run-ons sentences, structure ideas in sentences clearly and logically using a common checklist.
Academic Writing Skills (ENGL 331)	This course comprises 3 parts; Speaking, Public Speaking and Presentations. It is based on the 3 Ps (presentation, practice and production) approach. The speaking portion aims, through a hands-on approach, at training students in everyday, naturally occurring conversations in both formal and informal settings. The course will progress from personal introductions and everyday conversations to leading meetings and negotiations. The final portion is dedicated to presentations. The focus is on the preparation and delivery of presentations that will interest and inform audience. When opportunities arise, based on students output, phonetic and /or phonological instructions may take place.
Technical Writing (ENGL 332)	In this course, students are introduced to the basic skills of writing a successful technical report that satisfies the requirements of formal writing in English. The course makes use of the students' background knowledge of academic writing in ENGL 101 and ENGL 131 as well as their professional communication skills. By the end of this course, students will be able to produce a unique business report that is plagiarism-free, making use of knowledge and skills obtained in this course and other previous courses.
Physical Education I (PE 101)	This course is designed to provide the students with comprehensive physical fitness program to make them gain the proper physical shape in order to develop the mental, emotional, physical, and social aspects of living, necessary for a happy and productive life. The students will be introduced to the fundamentals of sports such as volleyball game focusing on skills, rules, and game strategy.
Physical Education II (PE 102)	This course provides students with an integrated fitness program in which they can reach a level of fitness that enables them to carry out their daily duties in keeping with their life conditions and the demands of their studies. Through this program, the

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	course equips students with the ability to lead an active life, fatigue-free. In addition, students practice basketball skills and are taught the rules so that they can practice this game properly.
Calculus I (MATH 101)	This course is intended to provide a strong base for three semester calculus sequence, emphasis is given to prime topics of differential calculus including: Limits and Continuity of functions of a single variable; Derivatives; Techniques of Differentiation; Applications of first (second) order derivatives to the problems dealing with related rates, linear approximations, behavior of functions, inflection, extreme values and optimization; Newton's method for approximate roots; Rolle's and Mean Value theorems.
Calculus II (MATH 102)	This course includes: knowledge of the fundamental concepts behind definite and indefinite integration for a function of single variable, i.e. Anti-differentiation, Riemann Sums and the Fundamental Theorem of Calculus, different techniques of integration; applications of definite integral in finding areas, volumes, arc lengths and average values; sequences and series including various tests for convergence; alternating series, absolute and conditional convergence; Maclaurin and Taylor series; power series and its convergence.
Linear Algebra & Differential Equations (MATH 204)	This course contains two parts, linear algebra and differential equations. The first part covers: Linear Systems of equations and their solutions, eigenvalues and eigenvectors, diagonalization of matrix, vector spaces and subspaces, linear combination and independence of vectors, basis and dimension for vector spaces. The second part is a study of differential equations and mathematical models. Topics include: The solution of first order differential equations with real-life applications, the solutions (general and particular) of homogeneous and non-homogeneous second order linear differential equations with constant coefficients.
Numerical Analysis (MATH 206)	This course is an introduction to the numerical analysis. The primary objective of the course is to develop the basic understanding of numerical algorithms and skills to implement algorithms to solve mathematical problems. This course gives a complete procedure for solving different kinds of problems that occur in computer science and engineering numerically.
General Physics I (PHYS 101)	General Physics I is a calculus-based course for computer science and engineering program. It focuses on basic concepts of Physics and their connections to everyday life. The topics covered in this course include the following fields: Measurements, vector analysis, motion in one and two dimensions, force and motion, work, energy and power, rotational dynamics, Conservation laws, equilibrium, elasticity, gravitation, fluid dynamics, and oscillatory motion. The laboratory part of the course reinforces the theoretical aspects of the course, and focuses on collaborative learning, group work and handling of the lab equipment.
General Physics II (PHYS 102)	This course uses calculus based mathematical models to introduce the fundamental concepts of physics. Topics covered include: wave motion and sound, temperature, first and second law of thermodynamics, kinetics theory of gases, coulomb's law, electric field, Gauss' law, electric potential, capacitors and dielectrics, D.C. circuits, the magnetic field, Ampere's, and Faraday's laws. Upon completion, students will be able to understand the principles involved and display analytical problem-solving ability for the topics covered. Laboratory work reinforces the principles discussed in lecture. This course is intended for computer science and engineering students with an interest in the most fundamental of physics concepts.
Computer Programming (CS 101)	This course will introduce students with basic programming concept. The topics covered in this course include: an introduction to basic structured programming skills, basic data types and operators, console input/output, logical expressions, control structures, functions, arrays, pointers, strings, and structures, algorithms and problem solving, problem analysis, solution design, testing, and fundamental of programming constructs. The laboratory work is designed to implement and support the theoretical concepts covered in the lectures.
Object Oriented Programming (CS 102)	Topics covered in this course include introduction to computer science, simple graphical user interfaces element and design, object-oriented programming

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	concepts, classes, objects, methods, encapsulation, inheritance, polymorphisms, method overloading, exception handling, and constructors and destructors. The lab works are designed to complement the theoretical concepts covered in the lectures through program implementation.
Digital Logic (CS 201)	Study of digital logic with an introduction to Boolean algebra, number systems and coding. Digital functions are implemented using logic gates, flip-flops and other integrated circuits. Emphasis is on analysis and design, including timing and gate level minimization techniques for combinational and sequential circuits. Coverage includes decoders, encoders, multiplexers, demultiplexers, latches, flip-flops, registers and counters, ROM and RAM memory. Students are exposed to implementing complex designs using a Hardware Description Language and FPGAs
Discrete Mathematics (CS 202)	This course introduces the foundation of discrete mathematics as they apply to computer science. Topics covered will include basic mathematical notions of sets and functions; logic, propositional logic, truth tables, issues of equivalence; predicate logic; proof techniques; commonly occurring mathematical concepts such as graphs, trees; representational issues; recursion; counting; combinatorics.
Computer Organization and Assembly Lang. (CS203)	The coverage of topics are the Basics of Computer Organization, Performance evaluation and Fundamentals of Computer architecture and Assembly language programming. Other Topics include Computer arithmetic, CPU organization; Data and Control path design, Pipelining, Memory system with Cache and I/O Organization.
Data Structures (CS 204)	This course is designed to provide the students with solid foundations in the basic concepts of programming: data structures and algorithms. Topics to cover include: Abstract Data Types (ADTs), Arrays, Records, Data representation in memory; Static, stack, and heap allocation, Linked structures, Implementation strategies for stacks, queues, and hash tables, Implementation strategies for graphs and trees, Strategies for choosing the right data structure.
Principles of Software Engineering (CS 277)	This course covers software engineering disciplines in software processes, software project management, tools and environment, requirement engineering, software design, software development, software testing and software maintenance.
Design & Analysis of Algorithms (CS 302)	This course provides elementary introduction of concepts related to algorithm design and analysis. Specifically, it discusses elementary ideas and results on discrete probability, mathematical foundations needed to support measures of complexity and performance; along with recurrence relations and illustrates their role in asymptotic and probabilistic analysis of algorithms. It covers algorithm and design techniques and strategies such as greedy strategies, divide and conquer techniques and dynamic programming, and illustrate them using a number of well-known problems and applications.
Database Systems (CS311)	This course is designed to teach the fundamental concepts of database design and its use. It provides a study of data model, data description languages, and query facilities using SQL, project requirement, ERD diagram, functional dependency, data normalization and optimization, a review of transactions, backup and recovery concepts. The knowledge of above topics will be applied in the design and implementation of database application using a targeted DBMS as part of a semester-long project.
Artificial Intelligence (CS 331)	The areas that cover in this course are Introduction to state of the art of artificial intelligence in modern world, fundamental issues, searching strategies, Knowledge representation & reasoning, Basic machine learning, Perception & Computer vision, Reasoning under uncertainty, intro to Virtual reality (Modelling & simulation). The concepts are implemented in any language/tools.
Programming Languages (CS 306)	This course is designed to provide the students with solid foundations in the basic concepts of programming languages. The course covers the

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	common knowledge about the evaluation of programming languages, the history and evolution of the major programming languages, study of syntax and semantics analysis, bindings, type checking, and scopes. An in-depth examination of design and concepts of various programming languages such as control structures, sub-programs, exception handling, and run-time storage management. Review of imperative, functional, logic, object-oriented, and concurrent programming paradigms. The lab work is designed to implement and support the theoretical concepts covered in the theory.
Introduction to Web Development (CS 378)	This is an introductory course in web development. This course starts with the introduction to HTML5 and the basic HTML5 elements. Students will setup a local development environment including a data store. The presentation layer topics will include fundamentals of HTML5 and CSS. The course will cover the fundamentals of form data, request/response headers, session tracking and cookies. The basic concepts of backend programming will be covered for the server-side processes and the connection to databases.
Software & Interface Design (CS 379)	The course provides a comprehensive study of Human-Computer Interaction (HCI) designs. The topics include the basic concepts of graphical visualization, practical principles and guidelines to develop quality interface design, foundation of human-computer interaction related to software lifecycle, interaction styles, interaction devices and technologies, human-computer dialogue based on cognitive models, and the discussion of design issues and design usability.
Computer Architecture & Parallel Computing (CS 401)	This course covers the basic of computer architecture: I/O fundamentals, Buses, direct-memory access (DMA) and Parallelism Fundamentals: Introduction to parallelism, Parallel Decomposition, Parallel architecture, distributed systems and Cloud Computing.
Operating Systems (CS 480)	This is an introductory course on the internal operations and fundamental principles of operating systems (OS). Topics covered in this course include: Operating system History and overview. Operating system design principles. Concurrency, Synchronization, Scheduling and Dispatch, Memory management, device management, security and protection, and File systems.
Introduction to Computer Networks (CSE361)	This is an introductory course on computer networking. The course explains Internet, the network topology, performance, security, and protocols. Layered protocol. Application Layer - principles of network applications, application layer protocols and client-server and P2P applications. Transport Layer – connectionless transport (UDP), connection-oriented transport (TCP), reliable data transfer, flow and congestion control. Network layer - Internet protocol (IP), routing algorithms, L3 addressing, routing in the Internet. Data link layer-error control, flow control, multi access control, L2 addressing and local area networks. Fundamental concepts wireless and mobile computing, it also discusses concepts and the "building blocks" of today's data communication networks.
Information and Computer Security (NET 363)	This course provides an overview on history and examples of computer crime, security definitions and basic security principles. Covers security policies, procedures, risk assessment and mechanisms. Access control models. Implementation and usability issues. Physical and Infrastructure security. Authentication technologies. Operating system security. Encryption algorithms and protocols. External and internal firewalls. Software flaws and malware. Application, data, and host security, cryptography, Ethical issues in computer security. The course also emphasizes by incorporating ethical considerations and analyzing the societal, cultural, and economic impacts of computing solutions both locally and globally.
Begin COOP work & COOP (CS 492 & CS 493)	A continuous period of 28 weeks spent in industry with the purpose of acquiring practical experience in different areas of Computer Engineering. The period starts with an orientation course in one semester and then follows with the COOP course in the second semester. During this period, a student is exposed to the profession of Computer Science by working in the field. Students are required carry a major design project and to submit a final report and give a

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	presentation about the experience and the knowledge they gained during their cooperative work.
Summer Training (CS 494)	The starting of the cooperative work in the summer for nine (9)weeks duration just preceding the senior year. The student completing summer training have to submit report about the experience and the knowledge gained.
COOP 1 (CS 495)	A continuous period of 16 weeks spent in industry with the purpose of acquiring practical experience in different areas of Computer Science. During this period, a student is exposed to the profession of Computer Science by working in the field. Students are required carry a major design project and to submit a final report and give a presentation about the experience and the knowledge they gained during their cooperative work.
Senior Project I (CS 496)	This course is phase one preparation for completing a design for project. The course requires the students to work in small team to design, develop and implement a computer science related problem in conjunction with a faculty advisor. The course reinforces principles of the software design and development process and serves as the capstone to the computer science degree program
Senior Project II (CS 497)	This course is phase two for completing a design for project. The course requires the students to work in small team to design, develop and implement a computer science related problem in conjunction with a faculty advisor. The course reinforces principles of the software design and development process and serves as the capstone to the computer science degree program.
Web Application Development (CS 381)	Track Elective I. This is an advanced course in web engineering. It covers advanced topics in HTML5 including audio, video, maps, client-side storage, session, SSE etc. Advanced concept of CSS3 will be introduced. Advanced topics in JavaScript will be taught including regular expression, exception handling, dynamic user interface, AJAX etc. Students will be introduced with XML and JSON message formats. Students will be able to create and consume structures and work with a database using PHP.
Object Oriented Web Development (CS 382)	Track Elective II. This course focuses on object – oriented approach to web development. It will introduce the object – oriented programming using JavaScript and PHP. Rich user interface techniques using jQuery will be taught. Model – View - Controller design pattern for web application will be introduced. It will be implemented using the Zend framework. Persistence layer topics like object – relation mapping will be covered. Enterprise application features like auditing, authentication and authorization will be presented.
Enterprise Web Application Development (CS 383)	Track Elective III. This course is about enterprise level commercial quality applications. It will cover responsive user interface design using Bootstrap. It will also cover web components for data grid and reports. It will address the design and implementation of enterprise application features like internationalization and accessibility. Students will experience the design and implementation of business process automation. It will also cover web services including creating and consuming SOAP based and RESTful web service.
Mobile Application Development I (CS 385)	Track Elective I. This course introduces mobile application development for the Android platform. It is considered to be a beginner's course to the Android development framework. The course assumes that the students know java from before. Topics include creating basic activity applications that talk to a database, communicate with a server, download content and use the GPS and camera of the Smartphone. The course will also provide any background knowledge needed to understand the basic components and framework of an Android application like understanding Processes, Threads and other concept areas.
Introduction to Developing Hybrid Web Mobile Applications (CS 386)	Track Elective II. This course introduces the Hybrid Web Mobile application paradigm (where one writes a JavaScript, html and CSS application which runs natively on all supported mobile platforms like Android, Apple IOS, and Windows Phone). The course introduces the approach of "Write Hybrid or Web apps once and deploy too many app stores of different mobile platforms". This course teaches the usage and implementation of a hybrid web application framework. Topics will include creating mobile applications that communicate with an internet server, use a database, implement the phone's sensors such as GPS, camera, JavaScript based

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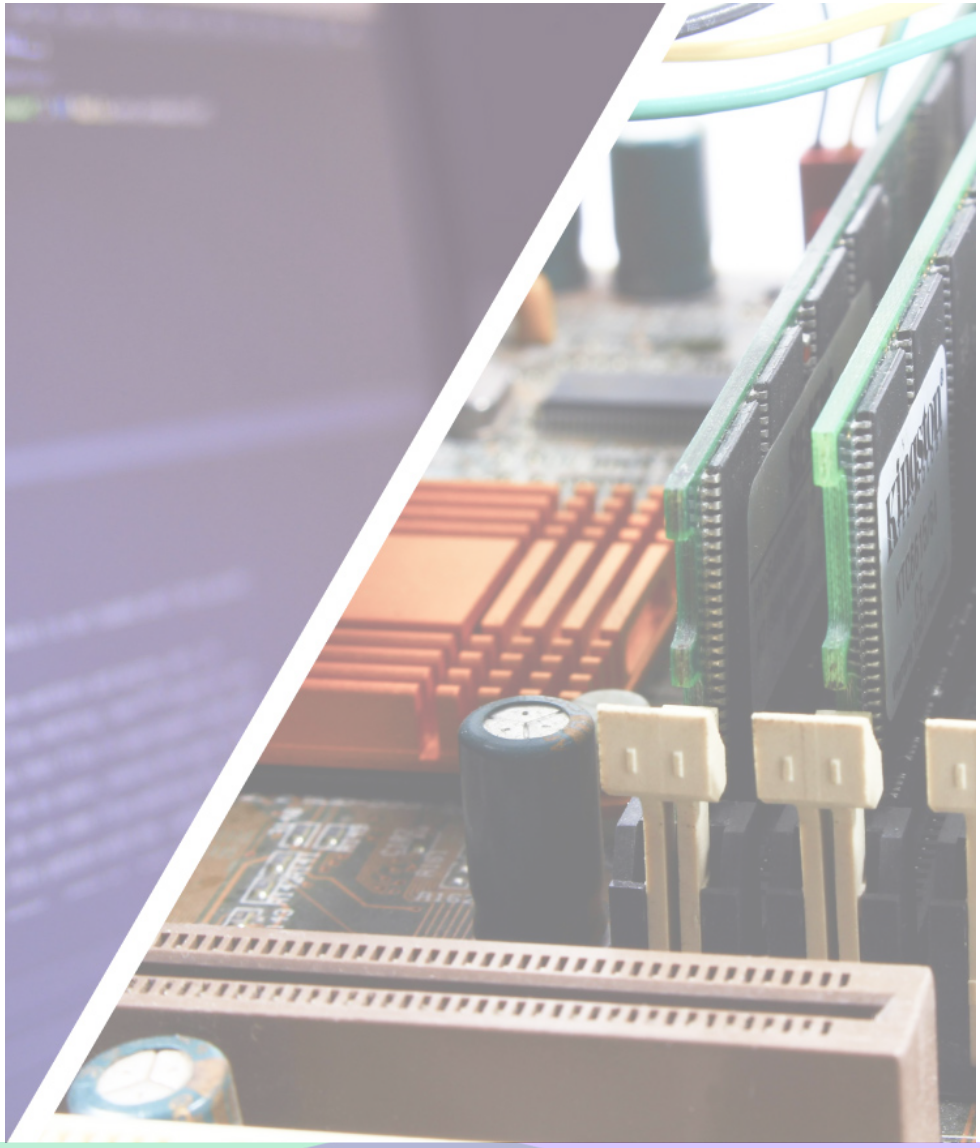
	mobile user interface and cover other parts of the API of the hybrid framework. The mobile applications would be deployed and tested on all the supported mobile platforms.
Mobile Application Development II (CS 387)	Track Elective III. This course continues from where the previous course Mobile Application Development with Android left off. It goes deeper into creating more advanced mobile applications that include activities, services, content providers and broadcast receiver objects. It covers the APIs of the other sensors on an android Smartphone, media, graphics, widgets and user interface.
Global Issues in ICT (XE 452)	This course on ICT (Information and Computer Technology) is designed as a social/general elective for MIS, CS and CE undergraduate level students. It provides a comprehensive treatment of the issues faced by computer professionals in today's modern working environment reflecting the latest trends and technologies, with a socio-technological perspective. It focuses on the work of few individuals that has an impact on many people world-wide. By knowing these factors, managers can make a rational choice among options that are effective and economical.
Free Elective (XX XXX)	A Free elective gives the opportunity to study a course from any discipline in the University, providing you meet the pre-requisites and/or co-requisites of that course. A free elective course is worth 3 credit hours and can be either level 1, 2, 3 or 4. It is highly encouraged to get advice from the advisor in choosing the free elective.
Department Elective (CS XXX)	A Department elective gives the opportunity to study a course from any program including Computer Science offered within the department, providing you meet the pre-requisites and/or co-requisites of that course. A department elective course is worth 3 credit hours and can be either level 1, 2, 3 or 4. It is highly encouraged to get advice from the advisor in choosing the department elective.
Math/Science Elective (MATH XXX)	This elective gives the opportunity to study an additional math or science course from any program offered in the university, providing you meet the pre-requisites and/or co-requisites of that course. A math/science elective course is worth 3 credit hours and can be either level 1, 2, 3 or 4. It is highly encouraged to get advice from the advisor in choosing the department elective.



Diploma in Computer Networks Technology

Program Description

To prepare the students with technical knowledge and practical skills for productive careers in the industry, commercial organizations and community by providing a suitable environment and state of art of teaching and learning in Computer and Network Technology.

Program Outcomes

•Develop technical proficiency in the field of computer and network technology.

•Develop problem-solving skills for computer and network related problems.

•Prepare students to work for entry-level positions through professional development and industry-relevant training.

•Prepare graduates to pursue productive careers in computer networking or a related computing field

•To apply their computer related knowledge and skills effectively and efficiently for the overall benefit of industry and society.

Study Plan

Diploma in Computer Network Technology

1st Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENG	101	English Communication	2	0	2	None	None
GSMA	101	Calculus I	3	0	3	None	None
GSPH	101	General Physics	3	3	4	None	None
CS	101	Computer Programming	2	3	3	None	None
GSIS	101	Islamic Ide & Thgt.	2	0	2	None	None
GSPE	101	Physical Education I	0	2	1	None	None
Total			**12**	**8**	**15**		

1st Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
GSMA	102	Calculus II	4	0	4	None	GSMA 101
ENG	102	English Communication	2	0	2	None	ENG 101
ICT	103	Data and File Structures	2	3	3	None	CS 101
CS	201	Digital Logic	3	3	4	None	CS 101
CSE	251	Electric Circuit Analysis	3	3	4	None	GSMA 101, GSPH 101
Total			**14**	**9**	**17**		

2nd Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ICT	102	Object Oriented Programming	2	3	3	None	CS 101
STAT	201	Applied Statistics	2	0	2	None	GSMS 102
ICT	201	Computer Organization	2	3	3	None	CS 201
ICT	211	Network Technology	2	3	3	None	None
ICT	212	Network Administration	2	6	4	ICT 211	None
ICT	222	System Administration	2	3	3	None	None
Total			**12**	**18**	**18**		

2nd Year / 2nd Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ENGT	201	Industrial Safety	0	2	1	None	ENG 102
ENGT	202	Industrial Supervision	1	0	1	None	ENG 102
ICT	213	Wireless Network Technology	2	3	3	None	ICT 211
ICT	214	Advanced Network Administration	2	6	4	None	ICT 212
ICT	215	Enterprise Network and Security	2	3	3	None	ICT 211
ICT	216	Computer Troubleshooting and Advice	2	3	3	None	ICT 201
ENG	201	Technical Report Writing	3	0	3	None	ENG 102
Total			**12**	**17**	**18**		

3rd Year / 1st Semester

Course	Code	Course Title	TH	LH	CH	Co- requisite	Pre-requisite
ICT	310	Computer Network Tech Co op Training (14 Weeks)	0	40	3	None	Complete 67 credits

Total Credits required to complete the program: 70

Targeted Jobs

- Network Technician
- Network Manager
- Network Consultant
- Technical Support Engineer
- Network Security Specialist
- Communication Systems Technician

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English Communication (ENG 101)	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA 101)	Calculus I deals with the concept of differential calculus needed in mathematics, science, and technology. Topics include limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem-solving sessions.
General Physics (GSPH 101)	General Physics is an algebra-based course. The aim of this course is to provide students with basic principles of general physics to support applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE 101)	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Calculus II (GSMA 102)	Calculus II deals with the concepts of integral calculus needed in mathematics, basic science, and technology. Topics include integration, techniques of integration, definite integrals and their applications, numerical integration, and differential equations.
English Composition (ENG 102)	English Composition is a second-semester ESP course designed for students pursuing their undergraduate studies in Mechanical, Electrical, Chemical, or Electronic Engineering at Yanbu Industrial College, part of the Colleges and Institutes of the Royal Commission at Yanbu, where the medium of instruction is English. Successful completion of ENG 101 - Communication is a prerequisite for this course. This course is part of the Associate Degree Program and focuses on written technical communication for the workplace. Students are exposed to the fundamentals of technical writing, produce graphs and charts, and participate in group work and effective oral presentations.
Applied Statistics (STAT 201)	Applied Statistics deals with statistical concepts and techniques commonly used in data analyses, particularly in science and technology. Topics include data collection and sampling techniques, frequency distributions and graphs, basic statistical measures of central tendency and variability, probability and counting rules, normal distribution, hypothesis testing, correlation and regression, reliability and failure data analysis, and quality control charts. Application problems will be solved during problem-solving sessions.
Industrial Safety (ENGT 201)	Industrial Safety provides students insight into safer workplace practices, hazard recognition, hazard minimization, and risk management. The course covers industrial safety principles and practices in the workplace and environments in the mechanical, electrical, chemical, and industrial sectors. Topics include flash points, fire extinguishers, radioactive substances, pressurized containers, confined spaces, symbols, tags, and signs, along with personal protective equipment (PPE) and safety practices for handling chemicals in laboratories.
Industrial Supervision (ENGT 202)	Provides knowledge on the role of supervision in industry, focusing on the responsibilities of supervisors and the skills required for effective management.
Electric Circuit Analysis (CSE 251)	Course Description This course covers history and overview of Electric circuits, Electrical Quantities, Resistive circuits and networks, Reactive circuits and networks, Frequency response, and Sinusoidal Analysis.
Computer Programming (CS 101)	Topics covered in this course include: an introduction to basic structured programming skills, basic data types and operators, console input/output, logical expressions, control structures, functions, arrays, pointers, strings, structures & file processing. The

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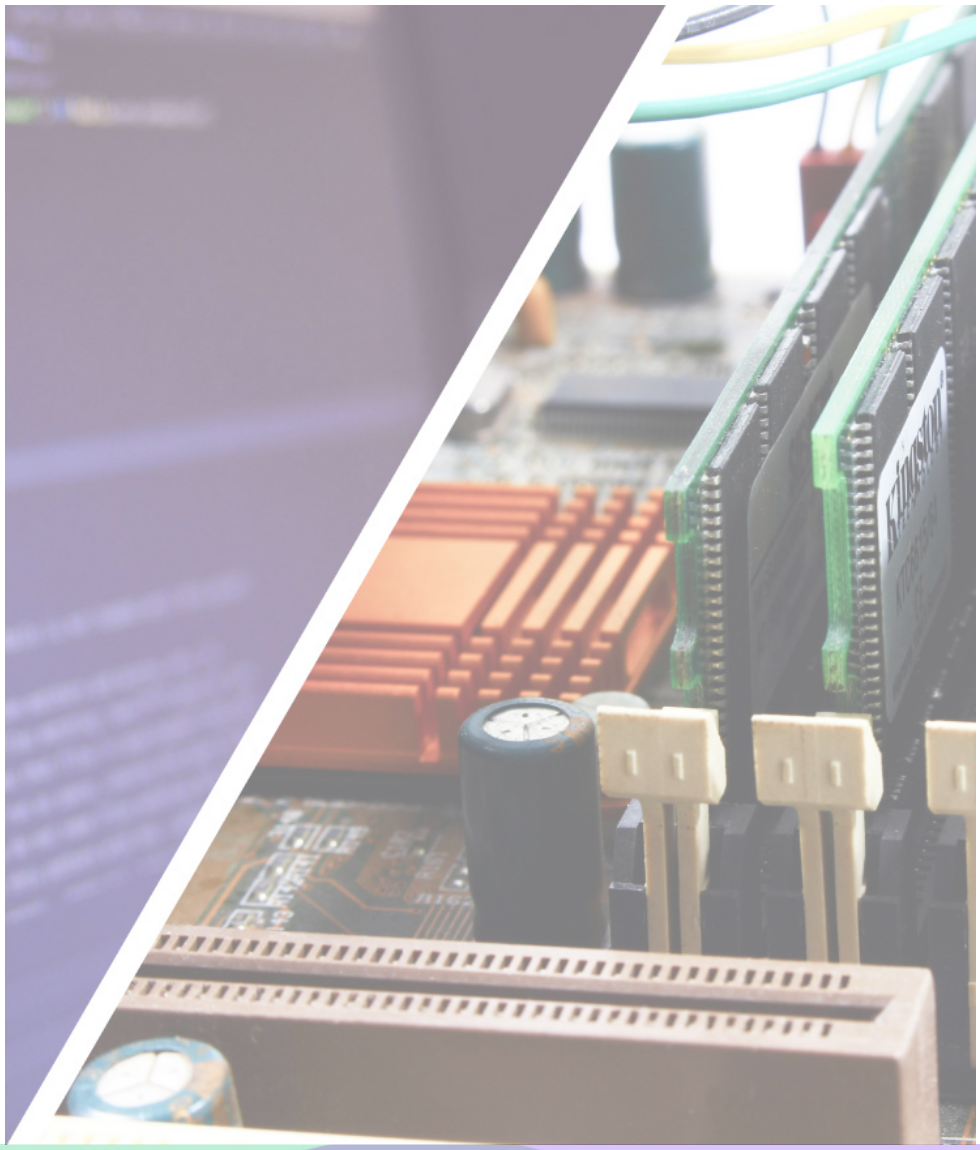
	algorithms and problem solving, analyzing problem, designing solution, testing designed solution, fundamental programming constructs, translation of algorithms to programs are also covered. The laboratory work is designed to implement and support the theoretical concepts covered in the lectures.
Digital logic (CS 201)	Study of digital logic with an introduction to Boolean algebra, number systems and coding. Digital functions are implemented using logic gates, flip-flops and other integrated circuits. Emphasis is on analysis and design, including timing and gate level minimization techniques for combinational and sequential circuits. Coverage includes decoders, encoders, multiplexers, de-multiplexers, latches, flip-flops, registers and counters, ROM and RAM memory. Students are exposed to implementing complex designs using a Hardware Description Language and FPGAs.
Object Oriented Programming (ICT 102)	The Object-Oriented Programming course aims to introduce the students programming and software development skills using object-oriented methodologies. Students will be focused on topics like classes, methods, objects, overloading constructors and arrays. Students will be able to practically implement concepts of abstraction, inheritance, encapsulation and polymorphism. Students will be able to perform error and exception handling, use current API's and packages to design and develop an effective Graphic User Interface (GUI). The theory is supported by extensive laboratory exercises to practically implement the concept using object-oriented programming language and tools
Data and File Structures (ICT 103)	This course introduces the students, core concepts in data and file structures. Students will be focused on topics like structures, linked lists, stacks, queues, binary tree, sorting searching, hashing, sequential and random files. Students will be able to practically design and implement data and file structures using high level programming languages through laboratory exercises.
Computer Organization (ICT 201)	The purpose of this course is to introduce the students, concepts of microprocessor and microcomputer organization, programming input/output (I/O) ports and control hardware through assembly language programming, computer hardware structures including peripheral devices. The students will be focused on computer evolution and arithmetic, central processing unit, the control unit, memory organization, input-output organization and parallel organization. The course is supported by practical exercises in the laboratory using assembly language programming.
Network Technology (ICT 211)	The course aims to introduce the students, concepts of computer networking, LAN topologies, transmission media, LAN protocols, and LAN hardware standard, Network protocols, data communication concepts and OSI model, Introduction to WAN, wireless network and network security. Laboratory exercise includes practical exposure to LAN hardware components and network software. Also, the students will establish small LAN in the laboratory.
Network Administration (ICT 212)	The course aims to introduce students the basics of switches, router communication and configuration. Students will learn various network types, network media, switching and routing fundamentals, TCP/IP Suite, IP addressing and subletting technologies. Students will be able to manage and configure switch and router operating systems, and managing network environments. It is well supported by hands on exercises in laboratory
Wireless Network Technology (ICT 213)	This course introduces the latest wireless networking technologies, wireless communication building blocks, Wireless hardware, wireless network services and protocols, understand the concepts behind RF propagation, operating range and security of wireless network. The students will get practical knowledge in wireless network implementation, and terminologies used in wireless networking. The course is supported by exercises in the laboratory.
Advanced Network Administration (ICT 214)	The course introduces switching configurations, routing protocols including static routing, dynamic routing, OSPF and EIGRP protocols. It covers internet technologies, Network services, Network security, Cloud Computing and Virtualization. This course also guides the students to manage and troubleshoot network data traffic. It is well supported by hands on exercises in laboratory.
Enterprise Network and Security	The course provides an overview on history and examples of computer network security, security

Diploma in Computer Networks Technology

List of Course Description

(ICT 215)	definitions, and basic security principles. The course covers security policies, procedures, vulnerability assessment, and risk management. The course discusses physical, communication, and infrastructure security issues. It describes important matters such as security protocols, access controls, authentication technologies, cryptography techniques, external and internal firewalls, VPN, computer viruses, and social engineering.
Computer Troubleshooting and Maintenance (ICT 216)	This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation of system software, commercial programs, system configuration, and device drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair nonfunctioning personal computers.
System Administration (ICT 222)	This course includes system administration concepts, server hardware configuration, install and deploy Network Operating system (NOS), managing network software, administer NOS management. This course also focuses on understanding of file system, process, user and disk space management. Also, it focuses different server roles such as file and print server, database server, DHCP server and DNS server, system accounting and logging, system backup and restores internal and external storage technologies.
Computer Network Tech Co-op Training (ICT 310)	This training program lasts for 14 weeks and is done at the end of the academic program.



Management Science Department

The Department of Management Sciences at Yanbu Industrial College is dedicated to fostering innovative leaders in management. With a curriculum that integrates theoretical knowledge and practical skills, the department prepares students for diverse career paths in business and industry. Faculty members are experienced professionals and scholars who provide personalized guidance, ensuring students develop critical thinking, problem-solving, and effective communication skills. The department emphasizes real-world applications through projects, internships, and collaborations with local industries. Committed to excellence in education, the Department of Management Sciences aims to cultivate a dynamic learning environment that empowers students to thrive in a competitive global market.

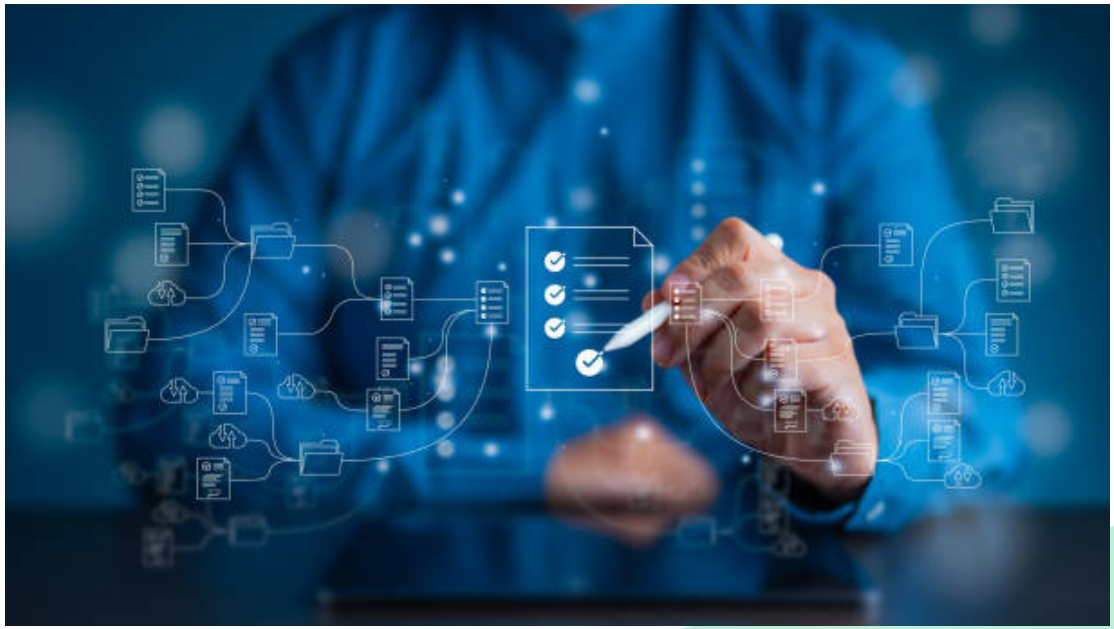
Department Goals

•Benchmark programs nationally and internationally to empower graduates

•Continuous program improvement through collaboration with academia and industry experts

•Ensure effective and sustainable operation in teaching and learning

•Promote learning activities that focus on the application of theoretical concepts into the workplace.



Academic Programs

- **Bachelor** of Science in Management Information Systems
- **Bachelor** of Science in Accounting
- **Bachelor** of Science in Supply Chain Management
- **Bachelor** of Science in Business Management (Marketing/Human Resources Management)

Bachelor of Science in Management Information Systems

Program Description

The MIS graduate is a well-rounded business professional, communicator, problem solver, and technologist. The MIS program is designed for the students who wish to pursue careers as Information systems analysts, Information systems managers, Information systems specialists, Information systems consultants, ERP Consultant, Database administrators, System Administrator, IS Security Professional, IT consultants, and Applications programmers and Web Developers.

Program Outcomes

- Demonstrate knowledge of Information Systems environment and Information Management tools; able to express and use that knowledge in their professional careers
- Develop the diverse knowledge areas of contemporary significance
- Develop skills of critical thinking, analysis and apply the knowledge and understanding of concepts and theories related to all functional areas of business
- Apply ethical, social skills and abide by legal responsibilities in management practices both in business and community services
- Communicate business ideas effectively through speaking, writing and listeningdemanded graduates by the job market.
- To apply their computer related knowledge and skills effectively and efficiently for the overall benefit of industry and society.

Targeted Jobs

- MIS Supervision
- MIS Operational Staff
- MIS Management

Study Plan

Bachelor of Science in Management Information Systems

2nd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ECON	101	Microeconomics	3	3	0	None	None
ENGL	101	English Composition I	3	3	0	None	None
ISLM	101	Islamic Ideology and Thought	2	2	0	None	None
MATH	111	Calculus for Management	4	4	0	ECON 101	None
MGT	211	Principles of Management	3	3	0	None	None
PE	101	Physical Education I	1	0	2	None	None
		Total	**16**	**15**	**2**		

2nd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	110	Financial Accounting I	3	2	3	None	MATH 111
ENGL	102	English Composition II	3	3	0	None	ENGL 101
ISLM	201	Human Rights in Islam	2	2	0	None	ISLM 101
MIS	203	Principles Of MIS	3	2	3	None	None
MKT	211	Principles of Marketing	3	3	0	None	None
PE	102	Physical Education II	2	2	0	None	PE 101
ARAB	101	Functional Grammar	1	0	2	None	None
		Total	**17**	**14**	**8**		

3rd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	212	Managerial Accounting	3	2	3	None	ACCT 110
ARAB	201	Objective Writing	2	2	0	None	ARAB 101
ECON	102	Macroeconomics	3	3	0	None	ECON 101
ENGL	211	Business Report Writing	3	3	0	None	ENGL 102
MATH	112	Calculus for Management II	4	4	0	None	MATH 112
MIS	101	Introduction to Computer Programming	3	2	3	None	None
		Total	**18**	**16**	**6**		

3rd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ARAB	301	Arabic Communication	2	2	0	None	ARAB 102
ENGL	212	Business Communication	3	2	3	None	ENGL 102
MGT	212	Research Methodology	3	3	0	None	MATH 212
MIS	102*	Introduction to Informatics	3	2	3	None	MIS 101
MIS	202	Data Management	3	2	3	None	MIS 101
STAT	211	Statistics for Management I	3	3	0	None	MATH 111
		Total	**17**	**14**	**9**		

4thYear / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
FIN	220	Principles of Finance	3	3	0	None	ACCT 110
MGT	315	Business law	3	3	0	None	MGT 211
MIS	201*	Data & Information Structures	3	2	3	None	MIS 102
MIS	340	Business Data Communication & Networking	3	2	3	None	MIS 203
MIS	341*	System Analysis & Design I	3	2	3	None	MIS 203
STAT	311	Statistics for Management II	3	3	0	None	STAT 211
		Total	**18**	**15**	**9**		

4th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ISLM	301	Work Ethics in Islam	2	2	0	None	ISLM 201
MGT	214	Operations Management	3	3	0	None	MGT 211
XXX	xxx	General Elective I	3	3	0	None	70 Credit Hours
MIS	342*	System Analysis & Design II	3	2	3	None	MIS 341
MIS	343*	Principles of E-Commerce	3	2	3	None	MIS 203
MIS	xxx*	MIS Specialization Elective I	3	2/3	3/0	None	70 Credit Hours
LIS	101	Library and Information Sciences	1	0	2	None	None
		Total	**18**	**14/15**	**11/8**		

5th Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	418	Business Policy	3	3	0	None	MGT 214
MIS	440*	Management Support Systems	3	2	3	None	MIS 342
MIS	xxx*	MIS Specialization Elective II	3	2/3	3/0	None	70 Credit Hours
MIS	xxx*	MIS Specialization Elective III	3	2/3	3/0	None	70 Credit Hours
XXX	xxx	General Elective II	3	2/3	3/0	None	7 Credit Hours
XXX	xxx	General Elective III	3/2	2/3	0	None	70 Credit Hours
		Total	**17/18**	**13/17**	**3/12**		

5th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	490*	Coop Training	4	0	40		
		OR					
MGT	491*	Senior Project	4	2	6		
		Total	**4**				

Major Elctives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MIS	344	Information Systems Evaluation	3	2	3		MIS 203
MIS	348	Concepts in ERP	3	2	3		MIS 203
MIS	350	Introduction to GIS	3	2	3		MIS 203
MIS	352	Web Development Tools and Techniques	3	2	3		MIS 203
MIS	354	Operating Systems	3	2	3		MIS 203
MIS	356	Electronic Customer Relationship Management	3	2	3		MIS 203
MIS	442	Information Systems Strategy	3	2	3		MIS 203
MIS	445	Business Process Management	3	2	3		MIS 348
MIS	446	ERP Systems Implementation	3	2	3		MIS 348
MIS	447	Remote Sensing and Mapping	3	2	3		MIS 203
MIS	448	GIS Systems Implementation and Applications	3	2	3		MIS 341
MIS	449	Web-based Information Architecture	3	2	3		MIS 203
MIS	450	E-Business Implementation	3	2	3		MIS 343
MIS	451	Information Systems Management & Administration	3	2	3		MIS 341
MIS	452	Information Systems & Audit	3	2	3		MIS 341

General Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	322	Accounting Information Systems	3	2	3		MIS 203
ARAB	401	Arabic Communication	3	3	0		
ECON	401	Engineering Economics	3	3	0		
EGT	202	Industrial Supervision	1				
FIN	312	Corporate Finance	3	3	0		FIN 220
HRM	321	HR Planning and Acquisition	3	3	0		MGT 213
HRM	322	Compensation & Performance Management	3	3	0		MGT 213
HRM	323	Training and Development	3	3	0		MGT 213
MGT	213	Human Resource Management	3	3	0		MGT 211
MGT	301	Introduction to Management	3	3	0		
MGT	300	Project Management	3	3	0		
MGT	316	Entrepreneurship	3	3	0		MGT 211
MGT	317	International / Global Business	3	3	0		MGT 211
MGT	324	Money & Banking	3	3	0		FIN 220
MGT	341	Investment Management	3	3	0		
MGT	355	Presentation Skills for Managers	3	3	0		
MGT	443	Business Ethics	3	3	0		
MGT	444	Corporate Social Responsibility	3	3	0		
MGT	445	Quality Management and Productivity	3	3	0		MGT 214
MGT	462	Corporate Governance	3	3	0		
MKT	322	Marketing Research	3	3	0		MATH 111
MKT	325	Supply Chain Management	3	3	0		MGT 214
SOCS	401	Technology and Society	3	3	0		
SCM	325	Logistics Management	3	3	0		MGT 214
SCM	321	Fundamentals of supply Chain Management	3	3	0		MGT 214
SCM	322	Purchasing Management	3	3	0		MGT 214
SCM	323	Inventory Management	3	3	0		MGT 214
SCM	324	Warehouse Management	3	3	0		MGT 214
XE	451	Organizational Behavior	3	3	0		------
XE	452	Global Issues in ICT	2	2	0		------

Bachelor of Science in Management Information Systems

List of Course Description

English Composition I (ENGL 101):	This course emphasizes writing at the paragraph level. Methods of sentence combination into a sequence conveying a central idea of thought are introduced and employed in the context of descriptive, comparative, and explanatory composition of one or two paragraphs. Attention is also paid to such important aspects of text as coherence, unity and structure readability, and to areas of grammar and sentence structure such as fragments, fused sentences and subject-verb agreement.
Calculus for Management I (MATH 111):	Topics covered in this course include: introduction to calculus, limits, differentiation, and techniques of differentiation, local extrema, first and second derivative tests for local extrema, concavity and inflection points, curve sketching, applied extrema problems, and the mean value theorem and applications.
Introduction to Computer Programming (MIS 101)	This course introduces the basic principles of structured programming and design. Topics covered are: language syntax, primitive data types, algorithm development, flowcharting, logical relationships and procedural programming related issues. The lab work is designed to implement and support the theoretical concepts through programming assignments in the management environment.
Microeconomics (ECON 101)	This course is concerned with general microeconomic concepts related to the firm, supply, demand, production, cost, markets, pricing and investment.
Physical Education I (PE 101)	It is a required course sequence commencing in the freshman year. Students take a semester-long course and study at least one sport of their choice, and choices may be made from various sports offered in the college and physical fitness center. They are expected to actively participate in all physical activities. Attention will also be paid to knowledge of the sport or activity being presented, as well as the skill and attitude of the student.
Islamic Ideology and Thought (ISLM 101)	Topics covered in this course include: fundamentals of Islamic ideology and thought, main characteristics of the Islamic faith, Islamic description of the universe, human beings and life, effects of faith in our lives.

English Composition II (ENGL 102):	This course is continuation of ENGL 101. It integrates the paragraph principles of ENGL 101 into the writing of simply organized three or four paragraph compositions. A variety of rhetorical patterns such as thesis, support, comparison and contrast are employed. Particular attention is paid to improve sentence structure, verb formation and punctuation.
Calculus for Management II (MATH 112)	Topics covered in this course include: introduction to integration, fundamental theorem of calculus, techniques of integration, applications of definite integral, improper integrals, sequences and series, convergence tests, alternating series, absolute and conditional convergence, power series, and Taylor and Maclaurin series.
Introduction to Informatics (MIS 102)	This course is about Object-Oriented technology and modular design of systems using major and minor object-oriented concepts. An exposure to visual programming using GUIs will also be given. The lab work is designed to implement and support the theoretical concepts covered in the lectures through programming assignments in information system environment.
Financial Accounting (ACCT 110)	This course provides knowledge about basic concepts of accounting and deals with preparation of income statement and balance sheet of a business enterprise. It also deals with accounting conventions, the construction use, and interpretation of bank reconciliation statements, and the use of basic accounting software packages. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Physical Education II (PE 102)	This is a continuation of the PE 101 emphasizing on physical activities focusing on one sport chosen by the students.
Functional Grammar (ARAB 101)	Topics covered in this course include: studying chosen parts of Arabic grammar, verbs, the five verbs, nouns that are subject to desinential infliction with letters, derivatives, abrogative, indeclinable, numbers, and hamzah in a practical way with numerous applications.

Bachelor of Science in Management Information Systems

List of Course Description

Business Report Writing (ENGL 211)	This course is designed to provide students with the practical skills needed in the preparation of written business communications. It involves exercises aimed at developing and improving the students' ability to use library and information gathering, administrating questionnaires/surveys, critically review, organize and analyze the gathered information and data. In addition to this, instruction covers the accepted techniques of producing business proposals and reports. This covers the planning and production stages and includes format and use of graphics/pictorials, culminating in the actual production of a business report by the students on the topics chosen from their areas of specializations.
Finite Math (MATH 203)	Topics covered in this course include: linear equations and inequalities, systems of linear equations, basic material on matrices, elementary introduction to linear programming, counting techniques, permutations and combinations, probability for finite sample space, basic concepts in statistics, and topics in the mathematics of finance.
Data and Information Structures (MIS 201)	The course introduces the students into the classical data structures. During the course, the students learn algebraic specifications, stacks, queues, lists, hash tables, and graphs. The representations and implementations of the basic algorithms of these structures are also studied. In addition, the basic applications of each are studied. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Managerial Accounting (ACCT 212)	This course focuses on partnership and corporate accounting practices and deals with accounting for stocks, bonds and dividends, cash flow statements, interpretation of accounting statements, cost accounting, budgeting, responsibility accounting and cost-revenue accounting. The lab work is designed implement and support theoretical concepts covered in the lectures.
Macroeconomics (ECON 102)	This course is concerned with the general macroeconomic issues related to national income determination, business cycles, inflation, unemployment, fiscal and monetary policy, banking, economic growth and development, international trade and effects of Saudi Arabia's entry into the World Trade Organization.
Human Rights in Islam (ISLM 201)	Topics covered in this course include: special characteristics of Islam with respect to human rights, human rights protected under Islamic system.
Business English Communication (ENGL 212)	This course is designed to develop the students' ability to converse accurately and efficiently in English. Students encounter a variety of situations which encourage authentic use of English conversation through situational dialogues, descriptions, instructions and problem solving. In addition, presentational techniques and skills are taught and students gain experience in speaking in front of an audience by giving individual presentations on selected topics.
Statistics for Management I (STAT 211)	An introductory course designed for management and business majors. Topics covered include data and data collection, percentiles and quartiles, measures of central tendency and variability, methods of displaying and exploring data, conditional probability, and Bayes' theorem, binomial, Poisson and normal distributions, sampling, confidence intervals and quality control charts, regression and correlation with special emphasis on applications in management.
Data Management (MIS 202)	This course presents theory, concepts, and practice for database development and data management stressing the design and development of efficient business information systems. Emphasis is on data modeling, database design, data integrity, SQL, and implementation of a database application. The basic data administration will also be covered. The lab work is designed to implement and support the theoretical concepts covered in the lectures through practical project assignments.
Principle of MIS (MIS 203)	Topics covered in this course include: MIS concepts, information systems for operational, tactical and strategic management in the various functions of an organization and an overview of end-user computing. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Principles of Management (MGT 211)	This course focuses on the process of management such as planning, organizing, directing and controlling with respect to organizations. It also deals with issues involving management of functional areas, organizational environment and evolution of management thought.
Objective Writing (ARAB 201)	Topics covered in this course include: sources and forms of objective writing, objective essay, reporting, evaluation, administrative messages, summary, and scientific research.
Statistics for Management II (STAT 311)	This course is a continuation of STAT 211 with concentration on inferential statistics. Topics covered in this course include hypothesis testing, reliability and failure data analysis, regression, correlation, analysis of variance, time series and forecasting.

Bachelor of Science in Management Information Systems

List of Course Description

Business Law (MGT 315)	This course examines basic legal concepts and laws of Saudi Arabia covering business transactions with special emphasis on legal proceedings of actual cases. It also deals with the nature of the external legal systems and how they relate to Saudi Arabia.
Business Data Communication and Networking (MIS 340)	The course offers a balance between technical and practical aspects of data communication. Topics include a thorough understanding of the basic features, operations, and limitations of different types of computer networks with business user approach. It introduces concepts that help students achieve an in-depth understanding of the course by balancing the technical aspects with everyday practical aspects. Topics also include full coverage of wireless technologies, industry convergence, compression techniques, network security, LAN technologies, VoIP, and expanded coverage of error detection and correction.
Systems Analysis and Design I (MIS 341)	This course introduces fundamentals of systems development life cycle, basic systems analysis and design tools: data dictionary, data flow diagrams, process specifications, entity-relationship diagrams, and CASE tools. The front-end phases of SDLC and practice of analysis and design through case studies will also be covered. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Principles of Marketing (MKT 211)	This course examines the nature and scope of marketing function and its concepts. It deals with market segmentation, market positioning, and elements of marketing mix— product, price, promotion, placement and service marketing.
Principles of Finance (FIN 220)	This course deals with basic concepts of finance, decisions such as financing decision, capital budgeting decision, working capital decision and dividend decision. It also examines time value of money, long term and short-term finance, operating and financial leverage and the problems facing a finance manager in a typical business organization. The course focus on risk and return, working capital management, capital budgeting, cost of capital, capital structure & financing, and Islamic financing.
Work Ethics in Islam (ISLM 301)	Topics covered in this course include: good behavior for the integrated Islamic personality, principles of social dealings, work and professional ethics.
Academic Writing Skills (ENGL 300)	The focus of the course is a library research report about 1200 words. Students choose and narrow a research topic within their major field of study and use various resources such as library, internet etc., to find books and articles related to their topic. They must use at least six recent sources to write the report and they must provide a bibliography and references. Before writing their report students write descriptive and informative abstracts, short reports requiring the integration of material from several sources, and an academic proposal relating to their research report. They are expected to use logical, concise, precise and objective technical English to write the report. Students are taught how to give an oral presentation based on their research report. They also learn the content, strategy and style appropriate to five kinds of business letters.
Systems Analysis and Design II (MIS 342)	Topics covered in this course include: development of computerized business systems using CASE tools, 4GL and application generators, project management techniques, and back-end phases of SDLC. The lab work is designed to develop and implement real business systems through lab projects.
Principles of E-Commerce (MIS 343)	This foundational course focuses on principles of e-commerce from a business perspective. This course provides an overview of business and technology topics related to e-commerce, its infrastructure, business models, and strategy. The application of e-commerce to supply chain management, marketing strategies security and controls, electronic payment systems and global issues in e- commerce are also included. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Operations Management (MGT 214)	This course addresses the direction and control of the processes that transform inputs into finished goods and services. It deals with production function, job design, work measurement, quality management, production planning, location, layout and process design; scheduling, dispatching, capacity planning, and inventory control.
Arabic Communication (ARAB 301)	This course is designed to develop the students' ability to converse accurately and efficiently in Arabic. Students encounter a variety of situations which encourage authentic use of Arabic conversation through situational dialogues, descriptions, instructions and problem solving. In addition, presentational techniques and skills are taught and students gain experience in speaking in front of an audience by giving individual presentations on selected topics.
MIS/HIS Elective I (MIS/HIS 3xx)	This will be the first elective course for one of the specialization tracks, student opted for. Details of all these courses are provided subsequently.

Bachelor of Science in Management Information Systems

List of Course Description

MGT/HIS Management Elective (MGT/HIS xxx)	It is the only management elective student has to do. Student can choose any one from the available management elective courses. Details of all these courses are provided subsequently.
COOP Training (MIS 490)	Student can opt for COOP training. COOP Training is the work placement for a period of 14/15 weeks to get practical training in the area of MIS with an organization. Each student is evaluated on his performance on the job and is required to submit progress reports. The student is also required to submit a final report and give a seminar about his COOP work training. The COOP work will be evaluated by a team of six faculty members, including the advisor.
Capstone Senior Project (MIS 491)	Student can opt for project. The students will work on 14/15 weeks long MIS project, substantial and suitable in nature, employing previously learned concepts and methods under the supervision of a designated faculty member. The student is required to produce a workable output and submit a final report and give a presentation seminar about the project which will be evaluated by a team of six faculty members, including the advisor.
Management Support Systems (MIS 440)	Topics included in this course are: design of IS offering strategic advantages, competitive potential for strategic use of IS, issues related to information systems involving international networks, development of financial and audit structures, impact of IS/IT on the global business community. The student will examine strategies of actual companies and identify other strategies that can be deployed to gain competitive advantage in diverse settings.
Business Policy (MGT 418)	This course deals with concepts and ideas relating to policy making in a business organization. It is also concerned with problem analysis, decision-making process of choosing and implementing policies and the continuous appraisal of these policies. Case examples will be extensively used.
Library and Information Sciences (LIS 101)	The purpose of this course is to introduce the nature and role of research in library and information science and in the practice of librarianship and information management. Data collection and analysis techniques, as well as reporting and critical evaluation of research are also dealt with.
MIS/HIS Elective II (MIS/HIS 4xx)	This will be the 2nd elective course for one of the specialization tracks, student opted for. Details of all these courses are provided subsequently.
MIS/HIS Elective III (MIS/HIS 4xx)	This will be the 3rd and final elective course for one of the specialization tracks, student opted for. Details of all these courses are provided subsequently.
MIS/HIS Social Elective (XE/HIS 451)	It is the first of the two-set social/health based social elective course. Details of these courses are provided subsequently.
MIS/HIS Social Elective (XE/HIS 452)	It is the 2nd, MIS based social / health based social elective course. Details of these courses are provided subsequently.
Concepts in ERP Systems (MIS 348)	In today's cutting-edge business world, enterprise resource planning (ERP) systems plays a critical role, by bringing a company's many different functions together into one large integrated system. Topics covered in the course include how ERP systems can improve the functions of a company, streamline operations, and how the functional areas of the system relate to each other. The very latest trends and updates in ERP system as well as the basic functional areas of business and their relationships are introduced. The topics also include how to integrated information systems help organizations improve business process and provide managers with accurate, consistent, and current data for making informed strategic decisions.
Business Process Management (MIS 445)	As more and more businesses adopt enterprise systems globally, it becomes increasingly important for businesses to adopt a process-based approach to better conduct the realities of modern business. This course based on the integration of business operations and enterprise systems, to reflect how real-world business processes are managed and executed with respect to ERP. The topics include understanding of basic concepts of an integrated system and the possible process improvements due to its implementation. It bridges the gap between the fundamentals of how businesses operate (processes) and the tools that business people use to accomplish their tasks (systems). Topics also covered methods for fundamental understanding of business processes and their designing, modeling, analyzing and recording business processes.
ERP System Implementation (MIS 446)	The ERP implementation cycle is characterized by complexity, uncertainty and a long time-scale, a multi-disciplinary effort. The course looks an in-depth of myriad of activities that characterize an ERP implementation. The topics covered the cycle of events, issues and what can go wrong, preventative steps to smooth the progress of the implementation. It also ERP implementation cycle ERP and associated software applications (EDI, E-commerce, EIS/BI, SCP, CRM) etc.

Bachelor of Science in Accounting

Program Description

The Bachelor of Science program in Accounting educates students to function effectively in a wide range of accounting careers in all types of economic organizations. The program is designed to prepare graduates for accounting careers in industry, public accounting, government, not-for-profit organizations or for an academic accounting career. The program stresses basic conceptual knowledge in all fields of business administration as an essential foundation for an effective accounting career. The program includes financial accounting, accounting information systems, cost accounting, managerial accounting, advanced accounting, auditing, as well as practical training in accounting. The focus of the program is on the principles, concepts, and procedures of measuring, analyzing, and communicating economic information for decision-making.

Program Outcomes

•Demonstrate intense knowledge of Accounting environment and Accounting tools and be able to express and use those knowledge in their professional careers

•Develop skills of critical thinking, analysis and apply the knowledge and understanding of concepts and theories related to all functional areas of business

•Demonstrate the ability to critically assess and analyse issues in Accounting leading to informed problem-solving

Targeted Jobs

- Financial Accountant
- External Auditor
- Risk Controller
- Cost and Management Accountant
- Insurance advisers
- Accountant

Study Plan

Bachelor of Science in Accounting

2nd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ECON	101	Microeconomics	3	3	0		None
ENGL	101	English Composition I	3	3	0		None
ISLM	101	Islamic Ideology and Thought	2	2	0		None
MATH	111	Calculus for Management	4	4	0		None
MGT	211	Principles of Management	3	3	0		None
PE	101	Physical Education	1	1	2		None
		Total	**16**	**16**	**2**		

2nd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	110	Financial Accounting I	3	2	3		MATH 111
ENGL	102	English Composition II	3	3	0		ENGL 101
ISLM	201	Human Rights in Islam	2	2	0		ISLM 101
MIS	203	Principles Of MIS	3	2	3		None
ECON	102	Macroeconomics	3	3	0		ECON 101
ARAB	101	Functional Grammar	2	2	0		None
PE	102	Physical Education II	1	0	2		PE 101
		Total	**17**	**14**	**8**		

3rd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	211	Financial Accounting II	3	2	3		ACCT 110
ACCT	212	Managerial Accounting	3	2	3		ACCT 110
MKT	211	Principles of Marketing	3	3	0		None
ENGL	211	Business Report Writing	3	3	0		ENGL 102
ARAB	201	Objective Writing	2	2	0		ARAB 101
STAT	211	Statistics for Management I	3	3	0		MATH 111
		Total	**17**	**15**	**6**		

3rd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	214*	Intermediate Accounting	3	2	3		ACCT 211
FIN	220	Principles Of Finance	3	3	0		ACCT 212
MGT	212	Research Methodology	3	3	0		MGT 211
MGT	214	Operations Management	3	3	0		MGT 211
ENGL	212	Business Communication	3	2	3		ENGL 211
STAT	311	Statistics for Management II	3	3	0		STAT 211
		Total	**18**	**16**	**6**		

4thYear / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	315*	Cost Accounting	3	3	0		ACCT 212
FIN	312*	Corporate Finance	3	3	0		FIN 220
ACCT	316	Oil and Gas Accounting	3	3	0		ACCT 214
ACCT	322	Accounting Information Systems	3	2	3		MIS 203
MGT	315	Business Law	3	3	0		MGT 211
ISLM	301	Work Ethics in Islam	2	2	0		ISLM 201
		Total	**17**	**16**	**3**		

4th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	317	Forensic Accounting	3	3	0		ACCT 214
ACCT	319*	International Accounting	3	3	0		ACCT 214
ACCT	323*	Accounting for government and Non-profit Organizations	3	3	0		
ACCT	XXX*	Major Elective 1	3	3	0		
XXX**		General Elective 1	3	3	0		
ARAB	301	Arabic Communication	2	2	0		ARAB 201
		Total	**17**	**17**	**0**		

5th Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	413*	Auditing and Assurance Services	3	3	0		ACCT 214
ACCT	XXX*	Major Elective 2	3	3	0		
ACCT	XXX*	Major Elective 3	3	3	0		
XXX**		General Elective 2	3	3	0		
XXX**		General Elective 3	3	3	0		
MGT	418	Business policy	3	3	0		
		Total	**18**	**18**	**0**		

5th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	490*	COOP Training	4	0	40		
		OR					
ACCT	491*	Senior Project	4	2	6		
		Total	**4**				

General Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MIS	348**	Concepts in ERP	3	3	3		
MIS	445**	Business Process Management	3	3	3		
MIS	446**	ERP System Implementation	3	3	3		
HRM	321	Human Resource Planning and Acquisition	3	3	0		
HRM	322	Compensation and Performance management	3	3	0		
HRM	323	Training and Development	3	3	0		
MGT	213	Humen Resource Management	3	3	0		
MGT	300	Project Management	3	3	0		
MGT	317	Internetional/Globai Busines.	3	3	0		
MGT	324	Money and Banking	3	3	0		
MGT	341	Investment Management	3	3	0		
MGT	355	Prmentation Skills for Managers	3	3	0		
MGT	443	Business Ethics	3	3	0		
MGT	444	Corporate Social Responsibility	3	3	0		
MGT	445	Quality Management and Productivity	3	3	0		
MGT	462	Corporate Governance	3	3	0		
MIS	341	System Analysis and Design I	3	3	3		
MIS	343	Principle of E-Commerce	3	3	3		
MIS	356	Electronic Customer Ralationship Management	3	3	0		
MKT	321	Consumet Behavior	3	3	0		
MKT	322	Marketing Research	3	3	0		
MKT	324	Integrated Marketing Communication	3	3	0		
SCM	321	Fundamentals of Supply Chain Management	3	3	0		
SCM	322	Purchacing Management	3	3	0		
SCM	323	Inventory Management	3	3	0		
SCM	324	Warehouse Management	3	3	0		
SCM	325	Logistics Management	3	3	0		
SOSC	101	Behavioral Sciences in Business	3	3	0		
ARAB	401	Arabic Communication	3	3	0		
ECON	401	Engineering Economics	3	3	0		
SOCS	401	Society and Technology	3	3	0		
XE	451	Organizational Behavior	3	3	0		

Major Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	414	Governmental	3	3	0		
ACCT	418	Internal Auditing	3	3	0		
ACCT	419	Accounting for E-	3	2	3		
ACCT	325	Accounting for ZAKat	3	3	0		
ACCT	412	Advance Accounting	3	3	0		
ACCT	415	Financial Stament Analysis	3	3	0		

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English Composition I (ENGL 101):	This course emphasizes writing at the paragraph level. Methods of sentence combination into a sequence conveying a central idea of thought are introduced and employed in the context of descriptive, comparative, and explanatory composition of one or two paragraphs. Attention is also paid to such important aspects of text as coherence, unity and structure readability, and to areas of grammar and sentence structure such as fragments, fused sentences and subject-verb agreement.
Calculus for Management I (MATH 111):	Topics covered in this course include: introduction to calculus, limits, differentiation, and techniques of differentiation, local extrema, first and second derivative tests for local extrema, concavity and inflection points, curve sketching, applied extrema problems, and the mean value theorem and applications.
Microeconomics (ECON 101)	This course is concerned with general microeconomic concepts related to the firm, supply, demand, production, cost, markets, pricing and investment.
Physical Education I (PE 101)	It is a required course sequence commencing in the freshman year. Students take a semester-long course and study at least one sport of their choice, and choices may be made from various sports offered in the college and physical fitness center. They are expected to actively participate in all physical activities. Attention will also be paid to knowledge of the sport or activity being presented, as well as the skill and attitude of the student.

English Composition I (ENGL 101):	This course emphasizes writing at the paragraph level. Methods of sentence combination into a sequence conveying a central idea of thought are introduced and employed in the context of descriptive, comparative, and explanatory composition of one or two paragraphs. Attention is also paid to such important aspects of text as coherence, unity and structure readability, and to areas of grammar and sentence structure such as fragments, fused sentences and subject-verb agreement.
Calculus for Management I (MATH 111):	Topics covered in this course include: introduction to calculus, limits, differentiation, and techniques of differentiation, local extrema, first and second derivative tests for local extrema, concavity and inflection points, curve sketching, applied extrema problems, and the mean value theorem and applications.
Microeconomics (ECON 101)	This course is concerned with general microeconomic concepts related to the firm, supply, demand, production, cost, markets, pricing and investment.
Physical Education I (PE 101)	It is a required course sequence commencing in the freshman year. Students take a semester-long course and study at least one sport of their choice, and choices may be made from various sports offered in the college and physical fitness center. They are expected to actively participate in all physical activities. Attention will also be paid to knowledge of the sport or activity being presented, as well as the skill and attitude of the student.

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Physical Education II (PE 102)	This is a continuation of the PE 101 emphasizing on physical activities focusing on one sport chosen by the students.
Functional Grammar (ARAB 101)	Topics covered in this course include: studying chosen parts of Arabic grammar, verbs, the five verbs, nouns that are subject to desinential infliction with letters, derivatives, abrogative, indeclinable, numbers, and hamzah in a practical way with numerous applications.
Business Report Writing (ENGL 211)	This course is designed to provide students with the practical skills needed in the preparation of written business communications. It involves exercises aimed at developing and improving the students' ability to use library and information gathering, administrating questionnaires/surveys, critically review, organize and analyze the gathered information and data. In addition to this, instruction covers the accepted techniques of producing business proposals and reports. This covers the planning and production stages and includes format and use of graphics/pictorials, culminating in the actual production of a business report by the students on the topics chosen from their areas of specializations.
Finite Math (MATH 203)	Topics covered in this course include: linear equations and inequalities, systems of linear equations, basic material on matrices, elementary introduction to linear programming, counting techniques, permutations and combinations, probability for finite sample space, basic concepts in statistics, and topics in the mathematics of finance.

Managerial Accounting (ACCT 212)	This course focuses on partnership and corporate accounting practices and deals with accounting for stocks, bonds and dividends, cash flow statements, interpretation of accounting statements, cost accounting, budgeting, responsibility accounting and cost-revenue accounting. The lab work is designed implement and support theoretical concepts covered in the lectures.
Macroeconomics (ECON 102)	This course is concerned with the general macroeconomic issues related to national income determination, business cycles, inflation, unemployment, fiscal and monetary policy, banking, economic growth and development, international trade and effects of Saudi Arabia's entry into the World Trade Organization.
Human Rights in Islam (ISLM 201)	Topics covered in this course include: special characteristics of Islam with respect to human rights, human rights protected under Islamic system.
Business English Communication (ENGL 212)	This course is designed to develop the students' ability to converse accurately and efficiently in English. Students encounter a variety of situations which encourage authentic use of English conversation through situational dialogues, descriptions, instructions and problem solving. In addition, presentational techniques and skills are taught and students gain experience in speaking in front of an audience by giving individual presentations on selected topics.

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Statistics for Management I (STAT 211)	An introductory course designed for management and business majors. Topics covered include data and data collection, percentiles and quartiles, measures of central tendency and variability, methods of displaying and exploring data, conditional probability, and Bayes' theorem, binomial, Poisson and normal distributions, sampling, confidence intervals and quality control charts, regression and correlation with special emphasis on applications in management.
Principle of MIS (MIS 203)	Topics covered in this course include: MIS concepts, information systems for operational, tactical and strategic management in the various functions of an organization and an overview of end-user computing. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Principles of Management (MGT 211)	This course focuses on the process of management such as planning, organizing, directing and controlling with respect to organizations. It also deals with issues involving management of functional areas, organizational environment and evolution of management thought.
Objective Writing (ARAB 201)	Topics covered in this course include: sources and forms of objective writing, objective essay, reporting, evaluation, administrative messages, summary, and scientific research.

Statistics for Management II (STAT 311)	This course is a continuation of STAT 211 with concentration on inferential statistics. Topics covered in this course include hypothesis testing, reliability and failure data analysis, regression, correlation, analysis of variance, time series and forecasting.
Business Law (MGT 315)	This course examines basic legal concepts and laws of Saudi Arabia covering business transactions with special emphasis on legal proceedings of actual cases. It also deals with the nature of the external legal systems and how they relate to Saudi Arabia.
Principles of Marketing (MKT 211)	This course examines the nature and scope of marketing function and its concepts. It deals with market segmentation, market positioning, and elements of marketing mix— product, price, promotion, placement and service marketing.
Principles of Finance (FIN 220)	This course deals with basic concepts of finance, decisions such as financing decision, capital budgeting decision, working capital decision and dividend decision. It also examines time value of money, long term and short-term finance, operating and financial leverage and the problems facing a finance manager in a typical business organization. The course focus on risk and return, working capital management, capital budgeting, cost of capital, capital structure & financing, and Islamic financing.

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Work Ethics in Islam (ISLM 301)	Topics covered in this course include: good behavior for the integrated Islamic personality, principles of social dealings, work and professional ethics.
Academic Writing Skills (ENGL 300)	The focus of the course is a library research report about 1200 words. Students choose and narrow a research topic within their major field of study and use various resources such as library, internet etc., to find books and articles related to their topic. They must use at least six recent sources to write the report and they must provide a bibliography and references. Before writing their report students write descriptive and informative abstracts, short reports requiring the integration of material from several sources, and an academic proposal relating to their research report. They are expected to use logical, concise, precise and objective technical English to write the report. Students are taught how to give an oral presentation based on their research report. They also learn the content, strategy and style appropriate to five kinds of business letters.
Operations Management (MGT 214)	This course addresses the direction and control of the processes that transform inputs into finished goods and services. It deals with production function, job design, work measurement, quality management, production planning, location, layout and process design; scheduling, dispatching, capacity planning, and inventory control.
Arabic Communication (ARAB 301)	This course is designed to develop the students' ability to converse accurately and efficiently in Arabic. Students encounter a variety of situations which encourage authentic use of Arabic conversation through situational dialogues, descriptions, instructions and problem solving. In addition, presentational techniques and skills are taught and students gain experience in speaking in front of an audience by giving individual presentations on selected topics.
Business Policy (MGT 418)	This course deals with concepts and ideas relating to policy making in a business organization. It is also concerned with problem analysis, decision-making process of choosing and implementing policies and the continuous appraisal of these policies. Case examples will be extensively used.
Human Resource Management (MGT 213)	This course addresses the importance of human resources and its management in the organization. It deals with job organization, hiring and/or acquisition, utilization, maintenance, training and development, movement, and separation. It also addresses critical issues and trends on human resource management in a globalizing economy.
Financial Accounting II (ACCT211)	Financial Accounting II provides a continuation on the introduction to the concepts and uses of financial accounting information in a business environment and its role in the economic decision-making process. The focus of the course is still on the reporting and analysis of accounting statements. The topics cover will be an introduction to the merchandising operations and special journals, the financial reporting of Assets, Liability and Stockholder's Equity for corporations and preparation of statement of cash flows
Intermediate Accounting (ACCT214)	This course builds on the fundamentals of financial accounting and reporting that students learn in an introductory financial accounting course. This course is based on the conceptual framework of International Financial Reporting Standards (IFRS). Topics include income statement, statement of financial position, individual components of asset and liabilities, stockholder's equity, revenue recognition and accounting changes.

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Corporate Finance (FIN312)	This course examines important principles of corporate finance from the perspective of financial managers. It deals with investment decision, financial decision and dividend decision in the corporate perspective. The course also covers topics such as risk management and control as well as international corporate finance. Throughout, emphasis is placed on theoretical concepts and practical application of corporate finance using live case studies.
Cost Accounting (ACCT315)	The course deals with unit cost allocation method, cost controlling, measuring quality costs and evaluating performance of business. Students will be introduced to methods used by manufacturing companies as well as service organizations and retailers.
Oil and Gas Accounting (ACCT316)	This course introduces accounting principles related to oil, gas and energy industry. This course focus on accounting for upstream operation, exploration, acquisition, drilling and development costs, proved property cost under both successful method and full cost method.
Accounting Information Systems (ACCT322)	This course will examine the fundamentals of accounting systems design. Topics include business information systems, business processes and data flows, database concepts and tools, internal control and risks, auditing the information system, and using the information system to perform audit functions.
Forensic Accounting (ACCT317)	This course will cover theoretical and practical issues relevant to forensic accounting and fraud examination. Forensic accounting is the application of investigative and analytical skills to resolve financial issues in a manner that meets standards required by courts of law. Fraud examination is the process used to resolve allegations of fraud through the accumulation of evidence, including the investigation of systems and internal controls, and the detection of fraud circumstances. The course examines the investigative process as well as an array of tools and techniques used to investigate financial forensic issues and fraud. Topics include methods and techniques used by forensic accountants to collect, analyze and report relevant information for supporting cases to be presented in court; the nature, prevention, detection and investigation of different types of fraud, including: financial statement fraud, fraud against the organization, consumer fraud, and e-commerce fraud.
International Accounting (ACCT319)	This course provides the students with the knowledge of accounting issues unique to multinational corporations, especially with respect to foreign operations, and also acquire basic knowledge about the various functional areas of accounting in many countries of the world. The topics covered in this course are the development and classification of international accounting, comparative accounting practices, international financial reporting and disclosure, changing prices for global accounting and auditing standard and international financial statement analysis. The last topic covered is international taxation and transfer prices.
Accounting for Government and Non-profit Organizations (ACCT323)	This course introduces various governmental and non-profit aspects to the students. This course will focus on the overview of the budgeting, accounting, financial reporting, and auditing required of government and not-for-profit records in government, fund allocation, government-wide reporting, not-for-profit accounting, revenue and expense recognition, and issues of reporting for both government and non-profit entities organizations.
Accounting for Zakat and Tax (ACCT325)	This course introduces the relevant rules and regulations governing individual and business income tax and zakat. It also examines the theoretical foundations and applications of accounting in tax systems and Zakat system. Particular emphasis is placed upon the measurement of taxable income and funds subject to zakat and the preparation of Tax and Zakat reports. Saudi-Tax Law is presented in a way to assist students understand factors affecting doing Business in the kingdom of Saudi Arabia. Moreover,

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	tax for different business type wills also presented in addition to Accounting for Zakat within different legal entities and enterprises.
Advance Accounting (ACCT412)	This course studies the specialized areas of accounting including business combinations and diversified companies, mergers, consolidations, and acquisitions; partnership accounting; multinational transactions; and foreign currency transactions.
Auditing and Assurance Services (ACCT413)	This course introduces students to the basic principles governing an external audit. It looks at the objectives, standards and procedures employed by professional accountants in performing the audit. Topics included in this course are ethics, legal liability, internal control, audit objectives, statistical sampling and auditing standards applicable in performing the audit tasks. The aspect of auditing in the computerized environment and is implication is also examined. Current literature is used in this course and the student is required to solve auditing cases related to issues identified.
Financial Statement Analysis (ACCT415)	This course prepares to interpret and analyze financial statements and explore advanced financial reporting topics. It deals with how to use financial statement information to evaluate firm's past and present to predict likely future outcomes. This course also focuses on three groups: Owners, creditors and analysts.
Cooperative Training (ACCT490)	COOP training in Accounting is a continuous period of 14 weeks spent in the industry with the purpose of acquiring practical experience in the area of Accounting. During this period, the students will be exposed to examining business from multiple angles, and how to maximize their unique skill set. The students will be taught and trained by industry professionals who work in the field, teaching them how to balance the books in manufacturing and merchandising sectors, banks, and other financial institutions. a presentation about the experience and the knowledge they gained during their cooperative work.
Senior Project (ACCT491)	The Bachelors thesis is the culmination of the Bachelor of Science in Accounting program. A Bachelor's thesis is carried out in the form of a research project within the department. The Bachelor's thesis is used to assess the student's initiative and their ability to plan, report and present a project. Bachelor's thesis is a directed studies course taken in Year 4 where the student finalizes their research proposal in the first few weeks and then prepares a thesis. Students work independently and confer regularly with their supervisor who provides helpful advice on the direction of the research project. In addition to researching and writing the thesis, students will have to formally present it to the academic community.
Governmental Auditing (ACCT414)	This course introduces students to the governmental audit emphasize on the performance auditing. The topics covered in this course are auditor`s role and classes of auditing, basics of performance audit, the audit process, the audit performance and the audit communication.
Internal Auditing (ACCT418)	The course introduces students to the Internal Audit profession and the internal audit processes. The topics include Introduction to the Internal Audit and Internal Auditor`s role, with reference to the International Auditing Standards (ISA) and Code of Corporate Governance and Internal Control, Risk Assessment, Quality Assurance and Internal Audit Reports and other Internal Audit communications. The course concludes with a brief discussion on Issues of Ethics and Fraud in Internal Audit.
Accounting of E-commerce (ACCT419)	This course provides theoretical and practical knowledge about accounting aspects to E-commerce Business. The topics covers include classification of E-Commerce websites, revenue recognition, cost related to E-Commerce business, accounting principles applicable to E-Commerce business and accounting for GST in E-Commerce business.

Bachelor of Science in Supply Chain Management

Program Description

Globalization has dramatically impacted the way companies do business, and qualified professionals are in demand in the Logistics and Supply Chain Management (SCM) fields. With international air connections, proximity to shipping lanes, and future rail connections, Yanbu is positioned to become a logistics leader in the Kingdom.The Bachelor of Science in Supply Chain Management (SCM) program is established to provide students a firm foundation in SCM practices and equips them to meet current and future needs in the Logistics and SCM professions.

Program Outcomes

- Demonstrate intense knowledge of Logistics and Supply Chain Management with a global and strategic perspectives and be able to express those knowledge in their professional career.
- Develop the diverse knowledge areas of contemporary significance
- Develop skills of critical thinking, analysis and apply the knowledge and understanding of concepts and theories related to all functional areas of business
- Apply ethical, social skills and abide by legal responsibilities in management practices both in business and community services

Targeted Jobs

- Purchasing agent
- Logistics coordinator
- Transportation analyst
- Distribution center manager
- Plant manager
- Operations manager

Study Plan

Bachelor of Science in Supply Chain Managament

2nd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ECON	101	Microeconomics	3	3	0		None
ENGL	101	English Composition I	3	3	0		None
ISLM	101	Islamic Ideology and Thought	2	2	0		None
MATH	111	Calculus for Management	4	4	0		None
MGT	211	Principles of Management	3	3	0		None
PE	101	Physical Education I	1	0	2		None
		Total	**16**	**15**	**2**		

2nd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	110	Financial Accounting I	3	2	3		MATH 111
ENGL	102	English Composition II	3	3	0		ENGL 101
ISLM	201	Human Rights in Islam	2	2	0		ISLM 101
MIS	203	Principles Of MIS	3	2	3		None
MKT	211	Principles of Marketing	3	3	0		None
PE	102	Physical Education II	1	0	2		PE 101
ARAB	101	Functional Grammar	2	2	0		None
		Total	**17**	**14**	**8**		

3rd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	212	Managerial Accounting	3	2	3		ACCT110
ARAB	201	Objective Writing	2	2	0		ARAB 101
ECON	102	Macroeconomics	3	3	0		ECON101
ENGL	211	Business Report Writing	3	3	0		ENGL 102
SOSC	101	Behavioral Science in Business	3	3	0		None
STAT	211	Statistics for Management I	3	3	0		MATH 111
		Total	**17**	**16**	**3**		

3rd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ARAB	301	Arabic Communication	2	2	0		None
ENGL	212	Business Communication	3	2	3		ENGL 102
MGT	212	Research Methodology	3	3	0		MATH 111
MGT	213	Human Resource Management	3	3	0		MGT 211
MGT	214	Operations Management	3	3	0		MGT 211
STAT	311	Statistics for Management II	3	3	0		STAT 211
		Total	**17**	**16**	**3**		

4thYear / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
FIN	220	Principles of Finance	3	3	0		ACCT 110
ISLM	301	Work Ethics in Islam	2	2	0		ISLM 201
MGT	315	Business law	3	3	0		MGT 211
MGT	316	Entrepreneurship	3	3	0		MGT 214
SCM	321*	Fundamentals of Supply Chain Management	3	3	0		MGT 211
SCM	322*	Procurement Management	3	3	0		MGT 211
		Total	**17**	**17**	**0**		

4th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	317	International Business	3	3	0		MGT 211
SCM	323*	Inventory Management	3	3	0		MGT 211
SCM	324*	Warehouse Management	3	3	0		MGT 211
SCM	325*	Logistics Management	3	3	0		MGT 211
		General Elective 1	3	3	0		
*		Major Elective 1	3	3	0		
		Total	**18**	**18**	**0**		

5th Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	418	Business Policy	3	3	0		102 Credit Hours, MGT 214
SCM	426*	Transportation Management	3	3	0		SCM 321, SCM325*
		General Elective 2	3	3	0		
		General Elective 3	3	3	0		
*		Major Elective 2	3	3	0		
*		Major Elective 3	3	3	0		
		Total	**18**	**18**	**0**		

5th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	490*	Coop Training/Project	4	0	40		120 Hours
		OR					
MGT	491*	Senior Project	4	2	6		114 Hours
		Total	**4**				

General Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	211	Financial Accounting II	3	2	3		ACCT 110
ACCT	315	Cost Accounting	3	3	0		ACCT 212
ACCT	322	Accounting Information Systems	3	2	3		MIS 203
ECON	401	Engineering Economics	3	3	0		None
FIN	312	Corporate Finance	3	3	0		FIN 220
HRM	321	HR Planning and Acquisition	3	3	0		MGT 213
HRM	322	Compensation & Performance Management	3	3	0		MGT213
HRM	323	Training and Development	3	3	0		MGT 213
MGT	300	Project Management	3	3	0		MGT 211
MGT	324	Money & Banking	3	3	0		70 Credit Hours
MGT	341	Investment Management	3	3	0		70 Credit Hours
MGT	355	Presentation Skills for Managers	3	3	0		70 Credit Hours
MGT	443	Business Ethics	3	3	0		70 Credit Hours
MGT	444	Corporate Social Responsibility	3	3	0		70 Credit Hours
MGT	445	Quality Management and Productivity	3	3	0		70 Credit Hours MGT 214
MGT	462	Corporate Governance	3	3	0		70 Credit Hours
MIS	341	System Analysis and Design I	3	2	3		MIS 203
MIS	343	Principles of E-Commerce	3	2	3		MIS 203
MIS	356	Electronic Customer Relationship Management	3	3	0		MIS 203
MKT	321	Consumer Behaviour	3	3	0		MKT 211
MKT	322	Marketing Research	3	3	0		MKT 211
MKT	324	Integrated Marketing Communications	3	3	0		MKT 211
SOCS	401	Technology and Society	3	3	0		70 Credit Hours
XE	451	Organizational Behavior	3	3	0		70 Credit Hours
MIS	372	Productivity Softwares & Applications	3	2	3		70 Credit Hours

Major Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
SCM	332	Information Systems for logistics Management	3	2	3		MIS 203
MIS	348	Concepts in ERP	3	2	3		MIS 203
SCM	341	Supply Chain Risk Management	3	3	0		70 Hours, SCM 321
SCM	445	Global Supply Chain	3	3	0		70 Hours, SCM 321
SCM	446	Lean Supply Chain Management	3	3	0		70 Hours, SCM 321
SCM	447	Maritime Operations & Management	3	3	0		70 Hours, SCM 321, SCM 325
SCM	448	Opeartions Research in Supply Chain Management	3	2	3		70 Hours, MATH111 STAT211, SCM321

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English Composition I (ENGL 101):	This course emphasizes writing at the paragraph level. Methods of sentence combination into a sequence conveying a central idea of thought are introduced and employed in the context of descriptive, comparative, and explanatory composition of one or two paragraphs. Attention is also paid to such important aspects of text as coherence, unity and structure readability, and to areas of grammar and sentence structure such as fragments, fused sentences and subject-verb agreement.
Calculus for Management I (MATH 111):	Topics covered in this course include: introduction to calculus, limits, differentiation, and techniques of differentiation, local extrema, first and second derivative tests for local extrema, concavity and inflection points, curve sketching, applied extrema problems, and the mean value theorem and applications.
Microeconomics (ECON 101)	This course is concerned with general microeconomic concepts related to the firm, supply, demand, production, cost, markets, pricing and investment.
Physical Education I (PE 101)	It is a required course sequence commencing in the freshman year. Students take a semester-long course and study at least one sport of their choice, and choices may be made from various sports offered in the college and physical fitness center. They are expected to actively participate in all physical activities. Attention will also be paid to knowledge of the sport or activity being presented, as well as the skill and attitude of the student.
Islamic Ideology and Thought (ISLM 101)	Topics covered in this course include: fundamentals of Islamic ideology and thought, main characteristics of the Islamic faith, Islamic description of the universe, human beings and life, effects of faith in our lives.
English Composition II (ENGL 102):	This course is continuation of ENGL 101. It integrates the paragraph principles of ENGL 101 into the writing of simply organized three or four paragraph compositions. A variety of rhetorical patterns such as thesis, support, comparison and contrast are employed. Particular attention is paid to improve sentence structure, verb formation and punctuation.
Calculus for Management II (MATH 112)	Topics covered in this course include: introduction to integration, fundamental theorem of calculus, techniques of integration, applications of definite integral, improper integrals, sequences and series, convergence tests, alternating series, absolute and conditional convergence, power series, and Taylor and Maclaurin series.
Financial Accounting (ACCT 110)	This course provides knowledge about basic concepts of accounting and deals with preparation of income statement and balance sheet of a business enterprise. It also deals with accounting conventions, the construction use, and interpretation of bank reconciliation statements, and the use of basic accounting software packages. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Physical Education II (PE 102)	This is a continuation of the PE 101 emphasizing on physical activities focusing on one sport chosen by the students.
Functional Grammar (ARAB 101)	Topics covered in this course include: studying chosen parts of Arabic grammar, verbs, the five verbs, nouns that are subject to desinential infliction with letters, derivatives, abrogative, indeclinable, numbers, and hamzah in a practical way with numerous applications.
Business Report Writing (ENGL 211)	This course is designed to provide students with the practical skills needed in the preparation of written business communications. It involves exercises aimed at developing and improving the students' ability to use library and information gathering, administrating questionnaires/surveys, critically review, organize and analyze the gathered information and data. In addition to this, instruction covers the accepted techniques of producing business proposals and reports. This covers the planning and production stages and includes format and use of graphics/pictorials, culminating in the actual production of a business report by the students on the topics chosen from their areas of specializations.
Finite Math (MATH 203)	Topics covered in this course include: linear equations and inequalities, systems of linear equations, basic material on matrices, elementary introduction to linear programming, counting techniques, permutations and combinations, probability for finite sample space, basic concepts in statistics, and topics in the mathematics of finance.
Managerial Accounting (ACCT 212)	This course focuses on partnership and corporate accounting practices and deals with accounting for stocks, bonds and dividends, cash flow statements, interpretation of accounting statements, cost

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	accounting, budgeting, responsibility accounting and cost-revenue accounting. The lab work is designed implement and support theoretical concepts covered in the lectures.
Macroeconomics (ECON 102)	This course is concerned with the general macroeconomic issues related to national income determination, business cycles, inflation, unemployment, fiscal and monetary policy, banking, economic growth and development, international trade and effects of Saudi Arabia's entry into the World Trade Organization.
Human Rights in Islam (ISLM 201)	Topics covered in this course include: special characteristics of Islam with respect to human rights, human rights protected under Islamic system.
Business English Communication (ENGL 212)	This course is designed to develop the students' ability to converse accurately and efficiently in English. Students encounter a variety of situations which encourage authentic use of English conversation through situational dialogues, descriptions, instructions and problem solving. In addition, presentational techniques and skills are taught and students gain experience in speaking in front of an audience by giving individual presentations on selected topics.
Statistics for Management I (STAT 211)	An introductory course designed for management and business majors. Topics covered include data and data collection, percentiles and quartiles, measures of central tendency and variability, methods of displaying and exploring data, conditional probability, and Bayes' theorem, binomial, Poisson and normal distributions, sampling, confidence intervals and quality control charts, regression and correlation with special emphasis on applications in management.
Principle of MIS (MIS 203)	Topics covered in this course include: MIS concepts, information systems for operational, tactical and strategic management in the various functions of an organization and an overview of end-user computing. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Principles of Management (MGT 211)	This course focuses on the process of management such as planning, organizing, directing and controlling with respect to organizations. It also deals with issues involving management of functional areas, organizational environment and evolution of management thought.
Objective Writing (ARAB 201)	Topics covered in this course include: sources and forms of objective writing, objective essay, reporting, evaluation, administrative messages, summary, and scientific research.
Statistics for Management II (STAT 311)	This course is a continuation of STAT 211 with concentration on inferential statistics. Topics covered in this course include hypothesis testing, reliability and failure data analysis, regression, correlation, analysis of variance, time series and forecasting.
Business Law (MGT 315)	This course examines basic legal concepts and laws of Saudi Arabia covering business transactions with special emphasis on legal proceedings of actual cases. It also deals with the nature of the external legal systems and how they relate to Saudi Arabia.
Principles of Marketing (MKT 211)	This course examines the nature and scope of marketing function and its concepts. It deals with market segmentation, market positioning, and elements of marketing mix— product, price, promotion, placement and service marketing.
Principles of Finance (FIN 220)	This course deals with basic concepts of finance, decisions such as financing decision, capital budgeting decision, working capital decision and dividend decision. It also examines time value of money, long term and short-term finance, operating and financial leverage and the problems facing a finance manager in a typical business organization. The course focus on risk and return, working capital management, capital budgeting, cost of capital, capital structure & financing, and Islamic financing.
Work Ethics in Islam (ISLM 301)	Topics covered in this course include: good behavior for the integrated Islamic personality, principles of social dealings, work and professional ethics.
Academic Writing Skills (ENGL 300)	The focus of the course is a library research report about 1200 words. Students choose and narrow a research topic within their major field of study and use various resources such as library, internet etc., to find books and articles related to their topic. They must use at least six recent sources to write the report and they must provide a bibliography and references. Before writing their report students write descriptive and informative abstracts, short reports requiring the integration of material from several sources, and an academic proposal relating to their research report. They are expected to use logical, concise, precise and objective technical English to write the report. Students are taught how to give an oral presentation based on their research report.
Operations Management (MGT 214)	This course addresses the direction and control of the processes that transform inputs into finished goods and services. It deals with production function, job design, work measurement, quality management, production planning, location, layout and process

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	design; scheduling, dispatching, capacity planning, and inventory control.
Arabic Communication (ARAB 301)	This course is designed to develop the students' ability to converse accurately and efficiently in Arabic. Students encounter a variety of situations which encourage authentic use of Arabic conversation through situational dialogues, descriptions, instructions and problem solving. In addition, presentational techniques and skills are taught and students gain experience in speaking in front of an audience by giving individual presentations on selected topics.
Business Policy (MGT 418)	This course deals with concepts and ideas relating to policy making in a business organization. It is also concerned with problem analysis, decision-making process of choosing and implementing policies and the continuous appraisal of these policies. Case examples will be extensively used.
Human Resource Management (MGT 213)	This course addresses the importance of human resources and its management in the organization. It deals with job organization, hiring and/or acquisition, utilization, maintenance, training and development, movement, and separation. It also addresses critical issues and trends on human resource management in a globalizing economy.
Project Management (MGT 300))	This course addresses the basic nature of Project Management and focuses on all facets of the steps needed to successfully manage a project - from planning and resources to budgeting and more. It especially focuses on type of projects, and project life cycle as the organizational guideline. The contents will cover the whole process of project management, including project initiation, project planning, project implementation and project termination and the characteristics of project and management. The course also covers essential areas of Project Management Body of Knowledge, defined by PMI.
Entrepreneurship (MGT 316)	This course offers a framework for understanding the entrepreneurial process and exposes the student to challenges, problems and issues faced by entrepreneurs who start new ventures. Teaching methods include case study, guest speakers with entrepreneurial experiences, lectures and team projects which develop actionable business plans. Major objectives are for students to learn how to identify and evaluate business opportunities, develop a business concept and marketing plan, assess and obtain the required resources, manage the growth of new ventures and exit strategies.
International Global Business (MGT 317)	In this course, students will describe major forces in the global environment and their impact upon business strategies, operations, and decision making. Upon completion of this course, students should have developed a global mindset and have a broader awareness of the intricacies of the global business environment.
Marketing Research (MKT 322)	This course is designed to provide an overview of marketing research and its use in making more effective marketing decisions. The primary emphasis is on designing research studies so that the results are both valid and pertinent. It has four major themes: (1) Taking general marketing problems and structuring them in terms of specific questions amenable to research. (2) Understanding primary and secondary sources of marketing research information, including issues in data collection. (3) Becoming familiar with specific techniques for analyzing marketing research data once it has been collected, and using those analyses to make better marketing management decisions. (4) Managing a reasonably complicated research project, working in a group, and making effective oral and written presentations.
Organizational Behavior (XE 451)	This course examines the complex relationships among individuals, groups, organizations and society. A dynamic, holistic, systems approach to understanding and facilitating work relationships is emphasized. Consideration is given to the interaction of individual values, attitudes, needs, abilities, traits, and motivation within teams and organizations.
Global Issues in ICT (XE 452)	Course combines computing text with societal implications of technology. It provides a comprehensive treatment of the issues facing computer professionals in today's modern working environment reflecting the latest trends and technologies. The course explores different implications of computing and the controversies arise, with a socio-technological perspective. The course covers issues faced by people as members of a technological society, relevant to the wider society of users, and citizens as well as professionals in computer-related fields. The course emphasizes on the importance of socio-security aspects of electronic societies, and business to provide an overview of the growing field of information ethics and its intersection with information security.
Behavioral Sciences in Business (SOSC 101)	This course is designed to provide students with the basic knowledge of sociology and psychology which will help them in developing the understanding of people and society. This course

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	will serve as an overview of the major fields within behavioral sciences with an emphasis on developing an understanding of psychology and sociology as the science of studying human behavior and society. They will also learn a scientific approach to the analysis of culture, socialization, social organization, the development of society, study of social processes, human groups, social institutions, and the effects of group relations on human behavior.
Quantitative Analysis for Management (MGT 212)	This course applies quantitative reasoning skills to business problems. Students learn to analyze data using a variety of analytical tools and techniques. Other topics include formulas, visual representation of quantities, time value of money, and measures of uncertainty.
Elective: Presentation Skills for Managers (MGT 355)	This course combines knowledge and experience in the preparation, development and delivery of public presentations. Uses an interactive format to teach effective communication skills for the modern manager; emphasizes both conventional and technologically enhanced preparation and presentation techniques. Communication workshops and weekly presentation-skills practice sessions utilizing video playback and personal coaching included. The aim is to enhance essential speaking skills, including audience analysis, the arrangement and organization of material, speaking mode/style, the use of visual aids, and the use of rhetorical techniques and principles.
Fundamentals of Supply Chain Management (SCM 321)	This course provides an introduction to Supply chain and distribution management and aims at providing students with a full understanding of business logistics management, transport, inventory and distribution systems supported with real business case studies. It includes the analysis of modern business supply chain management strategies, and discusses how products and services are created and delivered to the customers effectively.
Purchasing Management (SCM 322)	This course deals with the study of Purchasing Management function in business organizations. It discusses the purchasing functions and procedures and their impact on other departments within an organization. The course also provides an overview of source determination, quantity and price determination, the importance of maintaining quality standards and customer satisfaction, legal and financial issues in purchasing, international purchasing, modern trends in purchasing, and emphasizes the human relations angle in dealing with suppliers. Students are also exposed to the use of information and computer technology in purchasing management.
Inventory Management (SCM 323)	This course enables students to understand the role of inventory management in supply chain and techniques, tools used in inventory management including the categories, functions and costs of inventory. It covers, stock control systems, inventory categorization, and managing spare parts inventory. It also covers the importance of work in progress and finished goods inventories and methods to control these inventories. Inventory verification and valuation methods are discussed in detail and impact of inventory on financial statements has been explained thoroughly. Latest inventory planning techniques such as Just-in-Time (JIT), MRP and ERP are also included in the course.
Warehouse Management (SCM 324)	This course aims to give the students a thorough understanding of warehouse management systems & organization. It deals with warehouse location & layout, materials identification systems, materials handling systems and equipment. It also deals with receipt, issue & dispatch of materials, preservation & security of warehouse, and procedures for the disposal of obsolete & crap materials. In addition, it also deals with the records and documents used in warehouse management & the application of computers, preservation and security of materials stocked and handling hazardous materials on a warehouse.
Logistics Management (SCM 325)	This course introduces students to the concept of logistics management and how it is used in a business organization. Specifically, it deals with the nature and meaning, importance and process of logistics management and its application to the effective and efficient flow of materials. This course covers vital areas, including: concepts of logistics and distribution; planning for logistics
Transportation Law (SCM 426)	This course explains the fundamental role and importance of transportation in companies and in society, as well as the complex environment in which transportation service is delivered. Providing a framework and foundation for the role of transportation in supply chains, it offers an overview of the operating and service characteristics, cost structure, and challenges faced by today's providers of transportation. It also highlights a variety of critical transportation management issues, providing insight into the strategic activities and challenges

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	involved in the movement of goods through the supply chain.
Information Systems for Logistics Management (SCM 332)	This course discusses various issues in the area of information systems for logistics and supply chain management. The discussion covers the following areas: a) e-logistics and ICT Infrastructure, b) e-logistics and various modes of transport, c) electronic bills of lading, d) port centric ICT systems, e) warehouse management systems and RFID, f) electronic logistics market places, g) ICT in Multi-Modal transport. This course is supported by a computer laboratory component covering the following topics: a) supply chain management analytics, b) data capture and reporting, automatic identifier, c) geographic information systems and d) an appreciation of enterprise resource planning software.
Global Supply Chain (SCM 445)	The focused production and extreme competitiveness of some countries resulted into products and raw materials which are priced substantially lower than what one can buy within one's country. Due to these developments, it is necessary for a company to tap these sources in order to translate those economics happenings in another country into forces relevant to the competitiveness of one's company.
COOP Training (MGT 490)	At a culmination of their studies, Student can opt for COOP training. COOP Training is the work placement for a period of 14 weeks to get practical training in the area of Supply chain or Logistics with an organization. Each student is evaluated on his performance on the job and is required to submit progress reports. The student is also required to submit a final report and give a presentation about his COOP work training. The COOP work will be evaluated by a team of three faculty members, including the advisor. Additionally, the student is also evaluated by the Field Supervisor.
Senior Project (MGT 491)	At the culmination of studies, the Student can opt for Senior Project. The students will work for 14 weeks long Supply Chain or Logistics project, substantial and suitable in nature, employing previously learned concepts and methods under the supervision of a designated faculty member. The student is required to produce a workable output and submit a final report and give a presentation seminar about the project which will be evaluated by a team of three faculty members, including the advisor.

Bachelor of Science in Business Management (Marketing)

Program Description

The program will train students in various aspects of business operations across industries in both local and global perspectives, and offers them the opportunity for real-world experience to analyze, formulate and implement decisions in order to solve business problems.

Program Outcomes

- Demonstrate intense knowledge of Human Resource Management and Marketing field and be able to express and use those knowledge in their professional careers.
- Develop the diverse knowledge areas of contemporary significance
- Develop skills of critical thinking, analysis and apply the knowledge and understanding of concepts and theories related to all functional areas of business
- Apply ethical, social skills and abide by legal responsibilities in management practices both in business and community services
- Demonstrate the ability to critically assess and analyze issues in Human Resource Management and Marketing, leading to informed problem-solving.

Targeted Jobs

- Marketing research Assistant
- Advertising Assistant
- Sales Assistant

Study Plan

Bachelor of Science in Business Management (Marketing)

2nd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ECON	101	Microeconomics	3	3	0		None
ENGL	101	English Composition I	3	3	0		None
ISLM	101	Islamic Ideology and Thou	2	2	0		None
MATH	111	Calculus for Management	4	4	0		None
MGT	211	Principles of Management	3	3	0		None
PE	101	Physical Education I	1	0	2		None
		Total	**16**				

2nd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	110	Financial Accounting	3	2	3		MATH 111
ENGL	102	English Composition II	3	3	0		ENGL 101
ISLM	201	Human Rights in Islam	2	2	0		ISLM 101
MIS	203	Principles of MIS	3	2	3		None
MKT	211	Principles of Marketing	3	3	0		None
PE	102	Physical Education II	1	0	2		PE 101
ARAB	101	Functional Grammar	2	2	0		None
		Total	**17**				

3rd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	212	Managerial Accounting	3	2	3		ACCT 110
ARAB	201	Objective Writing	2	2	0		ARAB 101
ECON	102	Macroeconomics	3	3	0		ECON 101
ENGl	211	Business Report Writing	3	3	0		ENGL 102
SOSC	101	Behavioral Science in Business	3	3	0		None
STAT	211	Statistics for Management I	3	3	0		MATH 111
		Total	**17**				

3rd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ARAB	301	Arabic Communication	2	2	0		None
ENGL	212	Business Communication	3	2	3		ENGL 102
MGT	212	Quantitative Analysis for Mgt.	3	3	0		MATH 111
MGT	213	Human Resource Management	3	3	0		MGT 211
MGT	214	Operations Management	3	3	0		MGT 211
STAT	311	Statistics for Management II	3	3	0		STAT 211
		Total	**17**				

4thYear / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
FIN	220	Principles of Finance	3	3	0		ACCT 110
MGT	315	Business law	3	3	0		MGT 211
MGT	316	Entreprencurship	3	3	0		MGT 214
MKT	321*	Consumer Behaviour	3	3	0		MKT 211
MKT	322*	Marketing Research	3	3	0		MKT 211
ISLM	301	Work Ethics in Islam	2	2	0		ISLM 201
		Total	**17**				

4th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	317	International/Global Business	3	3	0		MGT 211
MKT	323	New Product Development & Pricing	3	3	0		MKT 211
MKT	324*	Integrated Marketing Communication	3	3	0		MKT 211
MKT	325*	Supply Chain Management	3	3	0		MKT 211
*		Major Elective 1	3	3	0		None
		General Elective 1	3	3	0		None
		Total	**18**				

5th Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	418	Business Policy	3	3	0		102 Credit Hours, MGT 214
MKT	426*	Strategic Marketing Management	3	3	0		MKT 324*
*		Major Elective 2	3	3	0		
*		Major Elective 3	3	3	0		
		General Elective 2	3	3	0		
		General Elective 3	3	3	0		
		Total	**18**				

5th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	490*	Coop Training/Project	40	4	0		120
		OR					
MGT	491*	Senior Project	6	4	2		
		Total	**4**				

General Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	211	Financial Accounting II	3	2	3		ACCT 110
ACCT	315	Cost Accounting	3	3	0		ACCT 212
ACCT	322	Accounting Information Systems	3	2	3		MIS 203
ECON	401	Engineering Economics	3	3	0		None
FIN	312	Corporate Finance	3	3	0		FIN 220
HRM	321	HR Planning and Acquisition	3	3	0		MGT 213
HRM	322	Compensation & Performance Management	3	3	0		MGT 213
HRM	323	Training and Development	3	3	0		MGT 213
MGT	300	Project Management	3	3	0		MGT 211
MGT	324	Money & Banking	3	3	0		70 Credit Hours
MGT	341	Investment Management	3	3	0		70 Credit Hours
MGT	355	Presentation Skills for Managers	3	3	0		70 Credit Hours
MGT	443	Business Ethics	3	3	0		70 Credit Hours
MGT	444	Corporate Social Responsibility	3	3	0		70 Credit Hours
MGT	445	Quality Management and Productivity	3	3	0		70 Credit Hours MGT 214
MGT	462	Corporate Governance	3	3	0		70 Credit Hours
MIS	341	System Analysis and Design I	3	2	3		MIS 203
MIS	343	Principles of E-Commerce	3	2	3		MIS 203
MIS	348	Concepts in ERP	3	2	3		MIS 203
MIS	356	Electronic Customer Relationship Management	3	3	0		MIS 203
SCM	321	Fundamentals of supply Chain Management	3	3	0		MGT 211
SCM	322	Purchasing Management	3	3	0		MGT 211
SCM	323	Inventory Management	3	3	0		MGT 212
SCM	324	Warehouse Management	3	3	0		MGT 213
SCM	325	Logistics Management	3	3	0		MGT 214
SOCS	401	Technology and Society	3	3	0		70 Credit Hours
XE	451	Organizational Behavior	3	3	0		70 Credit Hours
MIS	372	Productivity Softwares & Applications	3	2	3		70 Credit Hours

Major Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MKT	332	Sales Tools and Strategies	3	3	0		MKT 211&70 Credit Hours
MKT	334	Technology Applications and E-Marketing	3	3	0		MKT 211&70 Credit Hours
MKT	343	Business/ Industrial Marketing	3	3	0		MKT 211&70 Credit Hours
MKT	441	Brand Management	3	3	0		MKT 211&70 Credit Hours
MKT	443	Services Marketing	3	3	0		MKT 211&70 Credit Hours
MKT	445	Retailing Management	3	3	0		MKT 211&70 Credit Hours

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English Composition I (ENGL 101):	This course emphasizes writing at the paragraph level. Methods of sentence combination into a sequence conveying a central idea of thought are introduced and employed in the context of descriptive, comparative, and explanatory composition of one or two paragraphs. Attention is also paid to such important aspects of text as coherence, unity and structure readability, and to areas of grammar and sentence structure such as fragments, fused sentences and subject-verb agreement.
Calculus for Management I (MATH 111):	Topics covered in this course include: introduction to calculus, limits, differentiation, and techniques of differentiation, local extrema, first and second derivative tests for local extrema, concavity and inflection points, curve sketching, applied extrema problems, and the mean value theorem and applications.
Microeconomics (ECON 101)	This course is concerned with general microeconomic concepts related to the firm, supply, demand, production, cost, markets, pricing and investment.
Physical Education I (PE 101)	It is a required course sequence commencing in the freshman year. Students take a semester-long course and study at least one sport of their choice, and choices may be made from various sports offered in the college and physical fitness center. They are expected to actively participate in all physical activities. Attention will also be paid to knowledge of the sport or activity being presented, as well as the skill and attitude of the student.
Islamic Ideology and Thought (ISLM 101)	Topics covered in this course include: fundamentals of Islamic ideology and thought, main characteristics of the Islamic faith, Islamic description of the universe, human beings and life, effects of faith in our lives.
English Composition II (ENGL 102):	This course is continuation of ENGL 101. It integrates the paragraph principles of ENGL 101 into the writing of simply organized three or four paragraph compositions. A variety of rhetorical patterns such as thesis, support, comparison and contrast are employed. Particular attention is paid to improve sentence structure, verb formation and punctuation.
Calculus for Management II (MATH 112)	Topics covered in this course include: introduction to integration, fundamental theorem of calculus, techniques of integration, applications of definite integral, improper integrals, sequences and series, convergence tests, alternating series, absolute and conditional convergence, power series, and Taylor and Maclaurin series.
Introduction to Informatics (MIS 102)	This course is about Object-Oriented technology and modular design of systems using major and minor object-oriented concepts. An exposure to visual programming using GUIs will also be given. The lab work is designed to implement and support the theoretical concepts covered in the lectures through programming assignments in information system environment.
Financial Accounting (ACCT 110)	This course provides knowledge about basic concepts of accounting and deals with preparation of income statement and balance sheet of a business enterprise. It also deals with accounting conventions, the construction use, and interpretation of bank reconciliation statements, and the use of basic accounting software packages. The lab work is designed to implement and support the theoretical concepts covered in the lectures.
Physical Education II (PE 102)	This is a continuation of the PE 101 emphasizing on physical activities focusing on one sport chosen by the students.
Functional Grammar (ARAB 101)	Topics covered in this course include: studying chosen parts of Arabic grammar, verbs, the five verbs, nouns that are subject to desinential infliction with letters, derivatives, abrogative, indeclinable, numbers, and hamzah in a practical way with numerous applications.
Business Report Writing (ENGL 211)	This course is designed to provide students with the practical skills needed in the preparation of written business communications. It involves exercises aimed at developing and improving the students' ability to use library and information gathering, administrating questionnaires/surveys, critically review, organize and analyze the gathered information and data. In addition to this, instruction covers the accepted techniques of producing business proposals and reports. This covers the planning and production stages and includes format and use of graphics/pictorials, culminating in the actual production of a business report by the students on the topics chosen from their areas of specializations.
Finite Math (MATH 203)	Topics covered in this course include: linear equations and inequalities, systems of linear

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	equations, basic material on matrices, elementary introduction to linear programming, counting techniques, permutations and combinations, probability for finite sample space, basic concepts in statistics, and topics in the mathematics of finance.
Managerial Accounting (ACCT 212)	This course focuses on partnership and corporate accounting practices and deals with accounting for stocks, bonds and dividends, cash flow statements, interpretation of accounting statements, cost accounting, budgeting, responsibility accounting and cost-revenue accounting. The lab work is designed implement and support theoretical concepts covered in the lectures.
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MGT/HIS Management Elective (MGT/HIS xxx)	It is the only management elective student has to do. Student can choose any one from the available management elective courses. Details of all these courses are provided subsequently.
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Entrepreneurship (MGT 316)	This course offers a framework for understanding the entrepreneurial process and exposes the student to challenges, problems and issues faced by entrepreneurs who start new ventures. Teaching methods include case study, guest speakers with entrepreneurial experiences, lectures and team projects which develop actionable business plans. Major objectives are for students to learn how to identify and evaluate business opportunities, develop a business concept and marketing plan, assess and obtain the required resources, manage the growth of new ventures and exit strategies.
International Global Business (MGT 317)	In this course, students will describe major forces in the global environment and their impact upon business strategies, operations, and decision making. Upon completion of this course, students should have developed a global mindset and have a broader awareness of the intricacies of the global business environment.
Marketing Research (MKT 322)	This course is designed to provide an overview of marketing research and its use in making more effective marketing decisions. The primary emphasis is on designing research studies so that the results are both valid and pertinent. It has four major themes: (1) Taking general marketing problems and structuring them in terms of specific questions amenable to research. (2) Understanding primary and secondary sources of marketing research information, including issues in data collection. (3) Becoming familiar with specific techniques for analyzing marketing research data once it has been collected, and using those analyses to make better marketing management decisions. (4) Managing a reasonably complicated research project, working in a group, and making effective oral and written presentations.
Supply Chain Management (MKT 325)	This course will expose students to topics related to design and management of supply chains, from incoming raw materials to final product delivery. Course topics will include supply chain network design, facility planning, capacity planning, globalization and outsourcing, information technology, and global issues in supply chain management.
Organizational Behavior (XE 451)	This course examines the complex relationships among individuals, groups, organizations and society. A dynamic, holistic, systems approach to understanding and facilitating work relationships is emphasized. Consideration is given to the interaction of individual values, attitudes, needs, abilities, traits, and motivation within teams and organizations.
Global Issues in ICT (XE 452)	Course combines computing text with societal implications of technology. It provides a comprehensive treatment of the issues facing computer professionals in today's modern working environment reflecting the latest trends and technologies. The course explores different implications of computing and the controversies arise, with a socio-technological perspective. The course covers issues faced by people as members of a technological society, relevant to the wider society

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	of users, and citizens as well as professionals in computer-related fields. The course emphasizes on the importance of socio-security aspects of electronic societies, and business to provide an overview of the growing field of information ethics and its intersection with information security.
Behavioral Sciences in Business (SOSC 101)	This course is designed to provide students with the basic knowledge of sociology and psychology which will help them in developing the understanding of people and society. This course will serve as an overview of the major fields within behavioral sciences with an emphasis on developing an understanding of psychology and sociology as the science of studying human behavior and society. They will also learn a scientific approach to the analysis of culture, socialization, social organization, the development of society, study of social processes, human groups, social institutions, and the effects of group relations on human behavior.
Quantitative Analysis for Management (MGT 212)	This course applies quantitative reasoning skills to business problems. Students learn to analyze data using a variety of analytical tools and techniques. Other topics include formulas, visual representation of quantities, time value of money, and measures of uncertainty.
Strategic Marketing Management (MKT 426)	This integrative course uses case analysis to develop decision-making ability within the diverse field of marketing and uses an applied approach to understanding the role of the marketing function in strategic business planning. The main objective of this course is to give the student a solid foundation for applying the concepts and theories learned in other marketing courses. The course provides the student with a necessary mix of: critical analysis, application, and communication. Students will be expected to think both critically and creatively in order to complete in-class case analyses and major case analyses. Students will be expected to communicate effectively through both their written skills in written case analyses and their oral skills in class participation and case presentations. Students will be expected to understand how marketing is interrelated with other business functions.
Consumer Behavior (MKT 321	This course is concerned with how and why people behave as consumers. Its goals are to: 1) provide conceptual understanding of consumer behavior, 2) provide experience in applying consumer behavior concepts to marketing management and social
	policy decision-making, and 3) develop analytical capability in using behavioral research.
New Product Development (MKT 323)	The development of new products (goods or services) is an intensively cross-functional process. This course examines that process from the marketing perspective and identifies the key points of contact with operations, finance, organizational policy, and strategic planning. Although an overview of the entire process is provided in the course, special emphasis is placed on the evaluation of concepts early in the process. Thus, this course is very much concerned with ideas and how to select the best ideas and make them a reality. The main objectives of the course are (1) to familiarize students with the strategies, frameworks, conceptual tools, and types of marketing research that are considered best practices in the development of new products and (2) to give students the opportunity to apply some of these ideas and methods in the evaluation of a specific product concept, customizing the learning experience to their own needs and interests.
Integrated Marketing Communication (MKT 324)	This course provides a broad introduction to integrated marketing communications (IMC). Students learn the elements of a strategic communications plan. In the class, students also review marketing mix development in various product/service life stages of a company. This helps students gain an understanding that the integrated communications plan must tie to business goals, audience relevancy, market penetration, and measurable results. Lastly, students gain an understanding of how to plan and implement an integrated marketing communications plan from the viewpoints of advertising agencies, businesses, and nonprofit organizations.
Business and Industrial Marketing (MKT 343)	This course presents a comprehensive view of business markets, including industrial, institutional, and government markets. Major emphasis is on business buyer behavior and the business marketing environment as key factors shaping business marketing strategy development, planning, implementation, and control.
Technology Application and E-Marketing (MKT 334)	This course prepares students to integrate technology in marketing functions. Students design the organization and content of a Web site to accomplish one or more marketing objectives. Topics include basics of the World Wide Web, bandwidth, servers and storage, e-Marketing, e-Commerce, and targeting customers.

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Retailing Management (MKT 445)	A comprehensive study of the retailing structure, institutions, and environment. The main objective of this course is to familiarize students with key managerial and policy issues involved in the design, implementation and assessment of retail mix. It examines the world of retailing thus types of retailers and consumers buying behavior are investigated. The retailing strategies as to the retail market strategy, retail location, site selection, HRM, and CRM are also discussed. Finally merchandise management and elemental issues in store management are explored.
Services Marketing (MKT 443)	Emphasis is placed on the role of services in today's economy. The course will identify and examine the distinct issues which are encountered in the marketing of services and will explore appropriate strategies for implementing services marketing programs, primarily in services organizations, including health care, transportation, telecommunications, education, etc. Specifically, the course will examine in detail the role of people in delivering services, the importance of service quality as a strategic differentiating tool, and the importance of collaboration between marketing and human resources management in the delivery of services.
Brand Management (MKT 441)	This course on Brand Management addresses important branding decisions faced by organizations. The course is designed to improve students' marketing skills and understanding of specific marketing topics, as well as "big picture" issues of how various aspects of marketing "fit together," all from a brand equity perspective. Accordingly, Brand Management is organized around the product and brand management decisions that must be made to build, measure, and manage brand equity.
Elective: Presentation Skills for Managers (MGT 355)	This course combines knowledge and experience in the preparation, development and delivery of public presentations. Uses an interactive format to teach effective communication skills for the modern manager; emphasizes both conventional and technologically enhanced preparation and presentation techniques. Communication workshops and weekly presentation-skills practice sessions utilizing video playback and personal coaching included. The aim is to enhance essential speaking skills, including audience analysis, the arrangement and organization of material, speaking mode/style, the use of visual aids, and the use of rhetorical techniques and principles.
English Composition I (ENGL 101):	This course emphasizes writing at the paragraph level. Methods of sentence combination into a sequence conveying a central idea of thought are introduced and employed in the context of descriptive, comparative, and explanatory composition of one or two paragraphs. Attention is also paid to such important aspects of text as coherence, unity and structure readability, and to areas of grammar and sentence structure such as fragments, fused sentences and subject-verb agreement.
Calculus for Management I (MATH 111):	Topics covered in this course include: introduction to calculus, limits, differentiation, and techniques of differentiation, local extrema, first and second derivative tests for local extrema, concavity and inflection points, curve sketching, applied extrema problems, and the mean value theorem and applications.
Microeconomics (ECON 101)	This course is concerned with general microeconomic concepts related to the firm, supply, demand, production, cost, markets, pricing and investment.
Physical Education I (PE 101)	It is a required course sequence commencing in the freshman year. Students take a semester-long course and study at least one sport of their choice, and choices may be made from various sports offered in the college and physical fitness center. They are expected to actively participate in all physical activities. Attention will also be paid to knowledge of the sport or activity being presented, as well as the skill and attitude of the student.
Islamic Ideology and Thought (ISLM 101)	Topics covered in this course include: fundamentals of Islamic ideology and thought, main characteristics of the Islamic faith, Islamic description of the universe, human beings and life, effects of faith in our lives.
English Composition II (ENGL 102):	This course is continuation of ENGL 101. It integrates the paragraph principles of ENGL 101 into the writing of simply organized three or four paragraph compositions. A variety of rhetorical patterns such as thesis, support, comparison and contrast are employed. Particular attention is paid to improve sentence structure, verb formation and punctuation.

Bachelor of Science in Business Management (Human Resources Management)

Program Description

The program will train students in various aspects of business operations across industries in both local and global perspectives, and offers them the opportunity for real-world experience to analyze, formulate and implement decisions in order to solve business problems.

Program Outcomes

- Demonstrate Knowledge of major functional areas of business
- Develop the diverse knowledge areas of contemporary significance
- Develop skills of critical thinking, analysis and apply the knowledge and understanding of concepts and theories related to all functional areas of business
- Apply ethical, social skills and abide by legal responsibilities in management practices both in business and community services
- Demonstrate the ability to critically assess and analyze issues in Human Resource Management and Marketing, leading to informed problem-solving

Targeted Jobs

- Recruitment Assistant
- Payroll Assistant
- Budget organizer
- Quality Officer
- Training Development Officer
- Administrative consultant

Study Plan

Bachelor of Science in Business Management (Human Resources Management)

2nd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ENGL	101	English Composition I	3	3	0		None
MATH	111	Calculus for Management	4	4	0	ECON 101	None
MGT	211	Principles of Management	3	3	0		None
ECON	101	Microeconomics	3	3	0		None
ISLM	101	Islamic Ideology and Thought	2	2	0		None
PE	101	Physical Education I	1	0	2		None
		Total	**16**	**15**	**2**		

2nd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ENGL	102	English Composition II	3	3	0		ENGL 101
MIS	203	Principles Of MIS	3	2	3		None
ACCT	110	Financial Accounting I	3	2	3		MATH 111
MKT	211	Principles of Marketing	3	3	0		None
ISLM	201	Human Rights in Islam	2	2	0		ISLM 101
PE	102	Physical Education II	1	0	2		PE 101
ARAB	101	Functional Grammar	2	2	0		None
		Total	**17**	**14**	**8**		

3rd Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ENGL	211	Business Report Writing	3	3	0		ENGL 102
STAT	211	Statistics for Management I	3	3	0		None
ACCT	212	Managerial Accounting	3	2	3		ACCT 110
SOSC	101	Behavioral Science in Business	3	3	0		None
ECON	102	Macroeconomics	3	3	0		ECON 101
ARAB	201	Objective Writing	2	2	0		ARAB 101
		Total	**17**	**16**	**3**		

3rd Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ENGL	212	Business Communication	3	2	3		ENGL 211
MGT	212	Research Methodology	3	3	0		MATH 111
STAT	311	Statistics for Management II	3	3	0		STAT 211
MGT	214	Operations Management	3	3	0		MGT 211
MGT	213	Human Resource Management	3	3	0		MGT 211
ARAB	301	Arabic Communication	2	2	0		ARAB 201
		Total	**17**	**16**	**3**		

4thYear / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	315	Business law	3	3	0		MGT 211
MGT	316	Entrepreneurship	3	3	0		MGT 214
FIN	220	Principles of Finance	3	3	0		ACCT 110
HRM	321*	Human Resource Planning and Acquisition	3	3	0		MGT 213
HRM	322*	Compensation and Performance Mgt	3	3	0		MGT 213
ISLM	301	Work Ethics in Islam	2	2	0		ISLM 201
		Total	**17**	**17**	**0**		

4th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	317	International/Global Business	3	3	0		MGT 211
HRM	323*	Training and Development	3	3	0		MGT 213
HRM	324*	Organization Development and Change Management	3	3	0		MGT 213
HRM	325*	Issues and Development in HRM	3	3	0		MGT 213
*		Major Elective 1*	3	3	0		
		General Elective 1	3	3	0		
		Total	**18**	**18**	**0**		

5th Year / 1st Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	418	Business Policy	3	3	0		MGT 214
HRM	426*	Strategic Human Resource Mgt.	3	3	0		HRM 323, HRM 324, HRM 325
*		Major Elective 2*	3	3	0		
*		Major Elective 3*	3	3	0		
		General Elective 2	3	3	0		
		General Elective 3	3	3	0		
		Total	**18**	**18**	**0**		

5th Year / 2nd Semester

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
MGT	490*	Coop Training/Project	4	0	40		
		OR					
MGT	491*	Senior Project	4	2	6		
		Total	**4**				

General Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
ACCT	211	Financial Accounting II	3	2	3		
ACCT	315	Cost Accounting	3	3	0		
ACCT	322	Accounting Information Systems	3	2	3		
ARAB	401	Arabic Communication	3	3	0		
ECON	401	Engineering Economics	3	3	0		
FIN	312	Corporate Finance	3	3	0		
MGT	300	Project Management	3	3	0		
MGT	324	Money & Banking	3	3	0		
MGT	341	Investment Management	3	3	0		
MGT	355	Presentation Skills for Managers	3	3	0		
MGT	443	Business Ethics	3	3	0		
MGT	444	Corporate Social Responsibility	3	3	0		
MGT	445	Quality Management and Productivity	3	3	0		
MGT	462	Corporate Governance	3	3	0		
MIS	341	System Analysis and Design I	3	2	3		
MIS	343	Principles of E-Commerce	3	2	3		
MIS	348	Concepts in ERP	3	2	3		
MIS	356	Electronic Customer Relationship Management	3	3	0		
MKT	321	Consumer Behaviour	3	3	0		
MKT	322	Marketing Research	3	3	0		
MKT	324	Integrated Marketing Communications	3	3	0		
SCM	321	Fundamentals of supply Chain Management	3	3	0		
SCM	322	Purchasing Management	3	3	0		
SCM	323	Inventory Management	3	3	0		
SCM	324	Warehouse Management	3	3	0		
SCM	325	Logistics Management	3	3	0		
SOCS	401	Technology and Society	3	3	0		
XE	451	Organizational Behavior	3	3	0		
MGT	301	Introduction to Management	3	3	0		

Major Electives

Course	Code	Course Title	CH	TH	LH	Co- requisite	Pre-requisite
HRM	332	Negotiation & Collective Bargaining	3	3	0		
HRM	333	Industrial Relations	3	3	0		
HRM	434	Cross Culture Management	3	3	0		
HRM	436	Leadership Theory & Practice	3	3	0		

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Business Policy (MGT 418)	This course deals with concepts and ideas relating to policy making in a business organization. It is also concerned with problem analysis, decision-making process of choosing and implementing policies and the continuous appraisal of these policies. Case examples will be extensively used.
Human Resource Management (MGT 213)	This course addresses the importance of human resources and its management in the organization. It deals with job organization, hiring and/or acquisition, utilization, maintenance, training and development, movement, and separation. It also addresses critical issues and trends on human resource management in a globalizing economy.
Entrepreneurship (MGT 316)	This course offers a framework for understanding the entrepreneurial process and exposes the student to challenges, problems and issues faced by entrepreneurs who start new ventures. Teaching methods include case study, guest speakers with entrepreneurial experiences, lectures and team projects which develop actionable business plans. Major objectives are for students to learn how to identify and evaluate business opportunities, develop a business concept and marketing plan, assess and obtain the required resources, manage the growth of new ventures and exit strategies.
International Global Business (MGT 317)	In this course, students will describe major forces in the global environment and their impact upon business strategies, operations, and decision making. Upon completion of this course, students should have developed a global mindset and have a broader awareness of the intricacies of the global business environment.
Marketing Research (MKT 322)	This course is designed to provide an overview of marketing research and its use in making more effective marketing decisions. The primary emphasis is on designing research studies so that the results are both valid and pertinent. It has four major themes: (1) Taking general marketing problems and structuring them in terms of specific questions amenable to research. (2) Understanding primary and secondary sources of marketing research information, including issues in data collection. (3) Becoming familiar with specific techniques for analyzing marketing research data once it has been collected, and using those analyses to make better marketing management decisions. (4) Managing a reasonably complicated research project, working in a group, and making effective oral and written presentations.
Supply Chain Management (MKT 325)	This course will expose students to topics related to design and management of supply chains, from incoming raw materials to final product delivery. Course topics will include supply chain network design, facility planning, capacity planning, globalization and outsourcing, information technology, and global issues in supply chain management.
Organizational Behavior (XE 451)	This course examines the complex relationships among individuals, groups, organizations and society. A dynamic, holistic, systems approach to understanding and facilitating work relationships is emphasized. Consideration is given to the interaction of individual values, attitudes, needs, abilities, traits, and motivation within teams and organizations.
Global Issues in ICT (XE 452)	Course combines computing text with societal implications of technology. It provides a comprehensive treatment of the issues facing computer professionals in today's modern working environment reflecting the latest trends and technologies. The course explores different implications of computing and the controversies arise, with a socio-technological perspective. The course covers issues faced by people as members of a technological society, relevant to the wider society of users, and citizens as well as professionals in computer-related fields. The course emphasizes on the importance of socio-security aspects of electronic societies, and business to provide an overview of the

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	growing field of information ethics and its intersection with information security.
Behavioral Sciences in Business (SOSC 101)	This course is designed to provide students with the basic knowledge of sociology and psychology which will help them in developing the understanding of people and society. This course will serve as an overview of the major fields within behavioral sciences with an emphasis on developing an understanding of psychology and sociology as the science of studying human behavior and society. They will also learn a scientific approach to the analysis of culture, socialization, social organization, the development of society, study of social processes, human groups, social institutions, and the effects of group relations on human behavior.
Quantitative Analysis for Management (MGT 212)	This course applies quantitative reasoning skills to business problems. Students learn to analyze data using a variety of analytical tools and techniques. Other topics include formulas, visual representation of quantities, time value of money, and measures of uncertainty.
HR Planning and Acquisition (HRM 321)	This course introduces students to fundamental concepts of human resource planning, and provides them with an understanding of the wide range of staffing activities within both commercial and industrial organizations. This course develops students' abilities to analyze and integrate the complex social, cultural and organizational factors influencing human resource planning and staffing in the Hong Kong context. The course will examine the process of human resource planning, linking human resource planning with strategic planning, job analysis and job design, recruitment and selection of employees. Ethical issues such as discrimination and equal opportunities are discussed under the topics of job advertisement, selection and staff movement.
Compensation and Performance Management (HRM 322)	This course familiarizes students with the concepts of compensation management within the wider context of human resource management. It provides students with an understanding of the reward management process which includes pay survey, job evaluation, and the design of pay structure. Students will acquire basic data management techniques and recognize what are the factors that determine the pay levels and benefits of employees in the job market. Students will be aware of the problems related to performance management system and be able to give suggestions for improvement. The concept of equal opportunity in compensation and performance management will be emphasized throughout the course.
Training and Development (HRM 323)	This course provides a framework for establishing, revising and examining training programs in organizations. Topics include: needs assessment, development of training objectives, planning and delivery of instruction, learning principles and evaluation of training.
Organization Development and Change Management (HRM 324)	Organization Development and Effective Change Management is an interdisciplinary global-wide field of study that investigates the technologies, intricacies, impact, and the power of managing effective change and organization development within both profit and non-profit organizations. Through an analysis of several case studies, this course will follow the patterns and change management strategies utilized by successful change agents, leaders, and managers. Students will be introduced to a number of theories, technologies, and organizational practices in the field of leading organizational change and development that have made critical contributions to effective quadruple bottom line profitability and sustainability.
Issues and Developments in HRM (HRM 325)	This course examines the issue that globalization and multinational/transnational corporations raise for the study of industrial relations. Topics covered included: economic globalization and the growth and influence of multinational/transnational corporations; the national and international regulation of labor standards; and the regulatory and deregulatory dynamics of global integration.
Strategic Human Resource Management (HRM 426)	Strategic Human Resources Management course is based on a proactive approach to the management of people. Using your workplace as the starting point, you will walk through a strategic, competency-based facilitation model of human resource management. You will deal with practical aspects of managing people in the workplace in activities ranging from the assessment of the global environment to the identification of staffing needs and competencies that impact human resource decisions. You will assess the importance of coaching and open communication when inspiring individuals to overcome barriers to peak performance. Throughout the course, you will learn from others in your group as they apply the model to their environment. You

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	will learn by doing and by applying what you learn to your own work environment.
Negotiations & Collective Bargaining (HRM 332)	In this course students will examine the practical aspects of negotiations, collective bargaining, motives of participants, the labor contracts; strategy and tactics of bargaining. Emphasis will be on negotiations and collective bargaining in both unions and bargaining in the private sector. This course is intended to give students an understanding of why collective bargaining occurs, the nature and complexity of its operation, what effects it has on workers, organizations, and consumers.
Industrial Relations (HRM 333)	The aim of this course is to equip students with a perspective of industrial relations systems as practiced in major trading countries in the world. The course will cover industrial relations systems, IR regimes and IR developments in selected countries, as well as an international perspective of current industrial relations issues such as industrial democracy and the impact of technological change.
Cross-culture Management (HRM 434)	This course focuses on the challenges and opportunities associated with cross-cultural management. The Cross- Cultural Management course is intended to be a challenging advanced management course for the undergraduate business student. The focus will be on understanding culture's influence on management issues studied in previous business courses. Students will be challenged to integrate knowledge from this class with what they have gained from other business core courses and apply their accumulated knowledge to business case studies. Students will engage in active research and analytical problem solving related to cross cultural management and will frequently be called upon to brief their findings to the class.
Leadership Theory and Practice (HRM 436)	This course focuses on theoretical and applied foundation of leadership concepts, principles, practices and competencies; integration of theory and practice to apply various conceptual models of leadership to support management and leadership development within their organizations as well as create and implement their personal development plan.
Presentation Skills for Managers (MGT 355)	This course combines knowledge and experience in the preparation, development and delivery of public presentations. Uses an interactive format to teach effective communication skills for the modern manager; emphasizes both conventional and technologically enhanced preparation and presentation techniques. Communication workshops
COOP Training (MGT 490)	At a culmination of their studies, Student can opt for COOP training. COOP Training is the work placement for a period of 14 weeks to get practical training in the area of Marketing with an organization. Each student is evaluated on his performance on the job and is required to submit progress reports. The student is also required to submit a final report and give a presentation about his COOP work training. The COOP work will be evaluated by a team of three faculty members, including the advisor. Additionally, the student is also evaluated by the Field Supervisor.
Senior Project (MGT 491)	At the culmination of studies, the Student can opt for Senior Project. The students will work for 14 weeks long Marketing project, substantial and suitable in nature, employing previously learned concepts and methods under the supervision of a designated faculty member. The student is required to produce a workable output and submit a final report and give a presentation seminar about the project which will be evaluated by a team of three faculty members, including the advisor.

Why Us?

Why Us?

Yanbu Industrial College stands as a leading academic institution in technical and vocational education, blending local authenticity with global standards. We provide quality education accredited by prestigious local and international bodies, designed to prepare qualified professionals who meet current and future labor market needs.

Our Academic Accreditations:

ABET: We take pride in being the first educational institution outside the United States to earn the prestigious
ABET accreditation in 2007, placing our engineering and technical programs among the world's finest.

NCAAA: Our accreditation from the Education and Training Evaluation Commission (NCAAA) certifies our commitment to rigorous local quality standards in all aspects of education.

ACBSP: This international accreditation ensures our business programs keep pace with the latest developments in the world of business and leadership.

City & Guilds: A global professional certification that gives our graduates a competitive edge in the technical job market.

CEA: Language programs designed with international standards to develop professional communication skills.

These prestigious academic accreditations reflect our unwavering commitment to achieving the highest quality standards in education.
They ensure our curricula are continuously updated to keep pace with the latest scientific and practical developments, with a strong focus on practical application and real-world skills demanded by the job market. These accreditations also enhance our graduates' opportunities to compete for top positions locally and globally, as our degrees have become recognized marks of excellence and competence. At Yanbu Industrial College, we don't just provide education - we build a bright future for our students and our community.

Partnership