Bachelor of Business in Digital Marketing

2023-2024

1) General Program Presentation

Graduating with a Bachelor of Business in Digital Marketing necessitates the successful completion of a total of 120 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen based on stream preference. The table below shows how 120 credit hours are distributed across requirements:

Table 1: DMK credit hours distribution.

General Education Requirements	36 Credits
College Requirements	33 Credits
Program Requirements	42 Credits (9 Electives)
Total Credits Hours	120 Credits

2) General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

Communication (9 Credits)

Table 2: General education communication courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	(3 credits)	3		ICT 095*
ENL102	English Composition	(3 credits)	3	ENL101	
ENL201	Writing and Research	(3 credits)	3	ENL102	

*Preparatory Program; ICT 095 Information Technology Basics.

Innovation and Creativity (6 Credits)

Table 3: Innovation and Creativity Ethics compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	(3 credits)	3		

Table 4: General education innovation and creativity elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	(3 credits)	3		
ENI110	Intro. to Innovation and Creativity	(3 credits)	3		
ENI140	Design Thinking	(3 credits)	3		
ENI150	Innovation in Business Models	(3 credits)	3		
ENI160	Innovation and Globalization	(3 credits)	3		

Global Citizen (6 Credits)

Table 5: General education global citizen compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	(3 credits)	3	ICT095	

Table 6: General education global citizen elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	(3 credits)	3		
GEN202	Global Citizenship in the Digital Age	(3 credits)	3		
BUS201	Global Economics and Trade	(3 credits)	3		

Art and Humanities (9 Credits)

Table 7: General education art and humanities compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST 101	Islamic Culture and Values	(3 credits)	3		

Table 8: General education art and humanities elective course group I (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	(3 credits)	3		
ARB101	Arabic Communication skills	(3 credits)	3		
ART101	Art Appreciation	(3 credits)	3		
ART102	Intro. to Media and Communication	(3 credits)	3		

Table 9: General education art and humanities elective course group II (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	(3 credits)	3		
PLS254	Law and Society	(3 credits)	3		
PSY100	Introduction to Psychology	(3 credits)	3		
BUS300	Career Planning	(3 credits)	3		

Math and Science (6 Credits)

Table 10: General education math and science courses (6 credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT100	Business Math	3 Credits	3		
MAT210	Intro. to Probability & Statistics	3 Credits	3	MAT100	

3) College Requirements (33 Credits)

- **Business requirements (33 Credits)**

Table 11: Business courses

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS100	Introduction to Business Administration	3 Credits	3		
ACC101	Managerial Accounting	3 Credits	3	MAT100	
FIN102	Principle of Finance	3 Credits	3	MAT100	
MRK103	Principle of Marketing	3 Credits	3	BUS100	
BUS200	Business Statistics	3 Credits	3	MAT210	
BUS220	Business Economics	3 Credits	3	MAT210	
MIS300	Management Information Systems	3 Credits	3	INF120	
MGT310	Organization Behaviour	3 Credits	3	BUS100	
MGT340	Operations Management	3 Credits	3	MAT100 BUS100	
BUS345	Business Law and Ethics	3 Credits	3	BUS100	
MGT420	Innovation Management and Strategy	3 Credits	3	MIS300 MGT340	

4) Program Requirements (51 Credits):

- **Program Requirements (42 Credits)**

Table 12: Program courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
DMK210	Digital Marketing Fundamentals	3 Credits	3	MRK103	
DMK220	International Marketing Management	3 Credits	3	MRK103	
DMK225	Market Planning and Research	3 Credits	3	MRK103	
DMK230	Content Marketing	3 Credits	3	DMK210	
DMK310	Social Media Marketing	3 Credits	3	DMK210	
DMK315	E-commerce Marketing	3 Credits	3	DMK210	
DMK325	Digital Marketing Strategy	3 Credits	3	DMK225	
DMK330	Customer Relations and Consumer Behavior	3 Credits	3	DMK220	MGT340
DMK400	Internship in Marketing	3 Credits	3	DMK230	

				DMK310
DMK420	Mobile Applications Marketing	3 Credits	3	DMK210 DMK315
DMK440	Social Media and Web Analytics	3 Credits	3	MIS300 DMK310 DMK315
DMK460	Digital Advertising Campaign Management	3 Credits	3	DMK310 DMK315
DMK475	Legal and Ethical Issues in Digital Marketing	3 Credits	3	BUS345 DMK310 DMK315
DMK490	Capstone Design	3 Credits	3	Program Approval

- **Program Electives (9 Credits)**

Table 13: Program elective courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
DMK340	Influencer Marketing	3 Credits	3	DMK230	
DMK320	Emerging Trends in Digital Marketing	3 Credits	3	DMK225	
DMK435	Designing Brand Identity: Methods and Digital Tools	3 Credits	3	DMK325	
DMK445	Advanced Social Media Advertising	3 Credits	3	DMK310	
DMK450	Web Design and Development	3 Credits	3	MIS300	DMK440
DMK465	Services Marketing Strategy	3 Credits	3	DMK225	
DMK470	Advanced Web Analytics Tools	3 Credits	3	DMK440	
DMK480	Internship	3 Credits	3	Program Approval	
DMK495	Special Topics in Entrepreneurship and Innovation	3 Credits	3	Program Approval	

- Students can take up to three credits of technical electives from another program or institution.

Bachelor of Business in Entrepreneurship and Innovation

2023-2024

1) General Program Presentation

Graduating with a Bachelor of Business in Entrepreneurship and Innovation necessitates the successful completion of a total of 120 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen based on stream preference. The table below shows how 120 credit hours are distributed across requirements:

Table 1: ENI credit hours distribution

General Education Requirements	36 Credits
College Requirements	33 Credits
Program Requirements	42 Credits (9 Electives)
Total Credits Hours	120 Credits

2) General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

Communication (9 Credits)

Table 2: General education communication courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	(3 credits)	3		ICT 095*
ENL102	English Composition	(3 credits)	3	ENL101	
ENL201	Writing and Research	(3 credits)	3	ENL102	

*Preparatory Program; ICT 095 Information Technology Basics.

Innovation and Creativity (6 Credits)

Table 3: Innovation and Creativity Ethics compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	(3 credits)	3		

Table 4: General education innovation and creativity elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	(3 credits)	3		
ENI110	Intro. to Innovation and Creativity	(3 credits)	3		
ENI140	Design Thinking	(3 credits)	3		
ENI150	Innovation in Business Models	(3 credits)	3		

| | ENI160 | Innovation and Globalization | (3 credits) | 3 | | |

Global Citizen (6 Credits)

Table 5: General education global citizen compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	(3 credits)	3	ICT095	

Table 6: General education global citizen elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	(3 credits)	3		
GEN202	Global Citizenship in the Digital Age	(3 credits)	3		
BUS201	Global Economics and Trade	(3 credits)	3		

Art and Humanities (9 Credits)

Table 7: General education art and humanities compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST 101	Islamic Culture and Values	(3 credits)	3		

Table 8: General education art and humanities elective course group I (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	(3 credits)	3		
ARB101	Arabic Communication skills	(3 credits)	3		
ART101	Art Appreciation	(3 credits)	3		
ART102	Intro. to Media and Communication	(3 credits)	3		

Table 9: General education art and humanities elective course group II (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	(3 credits)	3		
PLS254	Law and Society	(3 credits)	3		
PSY100	Introduction to Psychology	(3 credits)	3		
BUS300	Career Planning	(3 credits)	3		

Math and Science (6 Credits)

Table 10: General education math and science courses (6 credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT100	Business Math	3 Credits	3		
MAT210	Intro. to Probability & Statistics	3 Credits	3	MAT100	

3) College Requirements (33 Credits)

- **Business requirements (33 Credits)**

Table 11: Business courses

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS100	Introduction to Business Administration	3 Credits	3		
ACC101	Managerial Accounting	3 Credits	3	MAT100	
FIN102	Principle of Finance	3 Credits	3	MAT100	
MRK103	Principle of Marketing	3 Credits	3	BUS100	
BUS200	Business Statistics	3 Credits	3	MAT210	
BUS220	Business Economics	3 Credits	3	MAT210	
MIS300	Management Information Systems	3 Credits	3	INF120	
MGT310	Organization Behaviour	3 Credits	3	BUS100	
MGT340	Operations Management	3 Credits	3	MAT100 BUS100	
BUS345	Business Law and Ethics	3 Credits	3	BUS100	
MGT420	Innovation Management and Strategy	3 Credits	3	MIS300 MGT340	

4) Program Requirements (51 Credits):

- **Program Requirements (42 Credits)**

Table 12: Program courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENI200	Foundations of Management and Entrepreneurship 1	3 Credits	3	BUS100 ACC101 FIN102 MRK103	
ENI210	Foundations of Business Analytics	3 Credits	3	BUS220	
ENI215	Entrepreneurship Leadership	3 Credits	3	BUS100	
ENI220	Foundations of Management and Entrepreneurship 2	3 Credits	3	ENI200	
ENI225	Socio-Ecological Systems	3 Credits	3	BUS100	
ENI315	Strategic Problem Solving	3 Credits	3	ENI220	MGT310

ENI320	Commercialization and Pitching	3 Credits	3	MGT310
ENI400	Internship in Entrepreneurship and Innovation	3 Credits	3	MIS300 MGT340
ENI405	Business Models and Plan	3 Credits	3	ENI210 ENI215
ENI410	Innovation and Sustainability	3 Credits	3	ENI225 ENI400
ENI415	Entrepreneurship and E-commerce	3 Credits	3	MIS300 MGT310 MGT340
ENI435	Entrepreneurial Marketing	3 Credits	3	ENI220
ENI455	Entrepreneurship and Managing Technology Innovation	3 Credits	3	MGT340 MGT420
ENI490	Capstone Design	3 Credits	3	Program Approval

- **Program Electives (9 Credits)**

Table 13: Program elective courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENI425	Market Research and Consumer Behaviour	3 Credits	3	ENI435	
ENI440	Entrepreneurship Finance	3 Credits	3	FIN102	
ENI445	Managing a Growing Business	3 Credits	3	ENI210	
ENI446	Venture Capital Experience	3 Credits	3	BUS200 BUS220	
ENI450	Social Entrepreneurship	3 Credits	3	ENI225	
ENI460	Entrepreneurship Ethical and Legal Issues	3 Credits	3	BUS345	
ENI480	Internship	3 Credits	3	Program Approval	
ENI495	Special Topics in Entrepreneurship and Innovation	3 Credits	3	Program Approval	

- Students can take up to three credits of technical electives from another program or institution.

Bachelor of Business in

Supply Chain and Logistics Management

2023-2024

1) General Program Presentation

Graduating with a Bachelor of Business in Supply Chain and Logistics Management necessitates the successful completion of a total of 120 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen based on stream preference. The table below shows how 120 credit hours are distributed across requirements:

Table 1: SCL credit hours distribution.

General Education Requirements	36 Credits
College Requirements	33 Credits
Program Requirements	42 Credits (9 Electives)
Total Credits Hours	120 Credits

2) General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

Communication (9 Credits)

Table 2: General education communication courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	(3 credits)	3		ICT 095*
ENL102	English Composition	(3 credits)	3	ENL101	
ENL201	Writing and Research	(3 credits)	3	ENL102	

*Preparatory Program; ICT 095 Information Technology Basics.

Innovation and Creativity (6 Credits)

Table 3: Innovation and Creativity Ethics compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	(3 credits)	3		

Table 4: General education innovation and creativity elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	(3 credits)	3		
GEN131	Creativity and Problem Solving	(3 credits)	3		
ENI110	Intro. to Innovation and Creativity	(3 credits)	3		
ENI140	Design Thinking	(3 credits)	3		
ENI150	Innovation in Business Models	(3 credits)	3		
ENI160	Innovation and Globalization	(3 credits)	3		

Global Citizen (6 Credits)

Table 5: General education global citizen compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	(3 credits)	3	ICT095	

Table 6: General education global citizen courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	(3 credits)	3		
GEN202	Global Citizenship in the Digital Age	(3 credits)	3		
BUS201	Global Economics and Trade	(3 credits)	3		

Art and Humanities (9 Credits)

Table 7: General education art and humanities compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST 101	Islamic Culture and Values	(3 credits)	3		

Table 8: General education art and humanities elective course group I (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	(3 credits)	3		
ARB101	Arabic Communication skills	(3 credits)	3		
ART101	Art Appreciation	(3 credits)	3		
ART102	Intro. to Media and Communication	(3 credits)	3		

Table 9: General education art and humanities elective course group II (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	(3 credits)	3		
PLS254	Law and Society	(3 credits)	3		
PSY100	Introduction to Psychology	(3 credits)	3		
BUS300	Career Planning	(3 credits)	3		

Math and Science (6 Credits)

Table 10: General education math and science courses (6 credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT100	Business Math	3 Credits	3		
MAT210	Intro. to Probability & Statistics	3 Credits	3	MAT100	

3) College Requirements (33 Credits)

- **Business requirements (33 Credits)**

Table 11: Business courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS100	Introduction to Business Administration	3 Credits	3		
ACC101	Managerial Accounting	3 Credits	3	MAT100	
FIN102	Principle of Finance	3 Credits	3	MAT100	
MRK103	Principle of Marketing	3 Credits	3	BUS100	
BUS200	Business Statistics	3 Credits	3	MAT210	
BUS220	Business Economics	3 Credits	3	MAT210	
MIS300	Management Information Systems	3 Credits	3	INF120	
MGT310	Organization Behaviour	3 Credits	3	MAT100 BUS100	
MGT340	Operations Management	3 Credits	3	BUS100	
BUS345	Business Law and Ethics	3 Credits	3	BUS100	
MGT420	Innovation Management and Strategy	3 Credits	3	MIS300 MGT340	

4) Program Requirements (51 Credits):

- **Program Requirements (42 Credits)**

Table 12: Program courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
SCL200	Principle of Management	3 Credits	3	BUS100	
SCL201	Principle of Procurement Management	3 Credits	3	SCL200	
SCL202	Logistics management	3 Credits	3	BUS100	
SCL203	Principle of Supply Chain Management	3 Credits	3	SCL200	
SCL310	Business Quantitative Methods	3 Credits	3	BUS200	
SCL315	Management of Production and Operations	3 Credits	3	SCL203	
SCL320	Global Supply Chain Operations	3 Credits	3	SCL203	

SCL340	Risk Management in Supply Chain	3 Credits	3	SCL320	
SCL400	Internship (Supply Chain and Logistics Management)	3 Credits	3	MGT340 SCL203	
SCL401	Business Process Integration	3 Credits	3	MIS300 MGT340 SCL315	
SCL402	Business Process Configuration	3 Credits	3	MIS300 MGT340 SCL315	
SCL410	Supply Chain Sustainability	3 Credits	3	SCL340	
SCL415	Strategic Management	3 Credits	3	SCL340	
SCL490	Capstone Design	3 Credits	3	Program Approval	

- **Program Electives (9 Credits)**

Table 13: Program elective courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
SCL325	Enterprise Resource Planning	3 Credits	3	SCL201 SCL202	
SCL420	Emerging Technologies and Supply Chain	3 Credits	3	MIS300 MGT340	
SCL430	AI Applications in Logistics	3 Credits	3	MIS300	
SCL435	Blockchain Applications in Supply Chain	3 Credits	3	MIS300	
SCL440	Supply Chain Strategy	3 Credits	3	SCL415	
SCL445	Advanced Transportation	3 Credits	3	SCL202	
SCL450	Decision Tools for Supply Chain Management and Logistics	3 Credits	3	SCL202	
SCL455	Research and Negotiation	3 Credits	3	SCL415	
SCL460	Supply Chain Planning and Inventory Control	3 Credits	3	SCL315 SCL415	
SCL480	Internship	3 Credits	3	Program Approval	
SCL495	Special Topics in Supply Chain and Logistics	3 Credits	3	Program Approval	

■ Students can take up to three credits of technical electives from another program or institution.

Bachelor of Science in
Biomedical and Instruments Engineering

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Biomedical and Instruments Engineering (BIE) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: BIE credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	43
Program Requirements	53 (Including 9 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours		
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (43 Credits)

Table 3.1: Compulsory courses for Math and Science (21 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT201	Calculus III	3	3	MAT102	
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
CHM101	Chemistry I	3	3	IMP099 or Equivalent	
CHM105	Chemistry I Lab	1	3		CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	

Table 3.2: Compulsory courses for Engineering (22 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
ENG207	Programming	3	3	MAT202	
ENG208	Introduction to Energy and Sustainability	3	3	PHY102 CHM105	
ENG204	Engineering Mechanics	3	3	PHY102	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202 MAT240	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG309	Engineering Project Management and Economics	3	3	ENG207 ENG208	

4. Program Requirements (53 Credits)

Table 4.1: Compulsory courses (44 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BIE101	Human Biology for Engineers	3	3	CHM101	
BIE201	Biochemistry	3	3	CHM101 BIE101	
BIE202	Biochemistry Lab	1	3		BIE201
BIE203	Human Anatomy and Physiology	3	3	BIE101	
BIE301	Biofluids and Biomedical Transport Phenomena	3	3	ENG204 MAT240	
BIE302	Biomaterials	3	3	BIE203 BIE202	
BIE303	Biomaterials Lab	1	3		BIE302
BIE304	Biomechanics	3	3	BIE203 BIE301	
BIE350	Signal Measurement Principles and Control Systems	3	3	ENG205 ENG304	
BIE351	Signal Measurement Principles and Control Systems Lab	1	3		BIE350
BIE352	Instrumentation, Measurements, and Data Acquisition	3	3	BIE350	
BIE353	Instrumentation, Measurements, and Data Acquisition Lab	1	3		BIE352
BIE371	Medical Imaging Systems	3	3	MAT201 BIE350	
BIE451	Instrumentation Design	3	3	BIE352	
BIE452	Instrumentation Design Lab	1	3		BIE451
BIE401	Biomedical Molecular and Nano Devices	3	3	BIE304 BIE371	
BIE490	Capstone Design 1	3	3	Pass 96 CH	
BIE491	Capstone Design 2	3	3	BIE490	

Table 4.2: Elective courses, students should select three courses (9 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BIE453	Electromagnetics Principles & Applications	3	3	BIE350	
BIE454	Instrumentation Electronics	3	3	BIE350	
BIE460	Process Instrumentation	3	3	BIE352	
BIE461	Safety and Reliability	3	3	BIE451	
BIE462	Communication Protocols	3	3	BIE352	
BIE466	Sensors Design	3	3	BIE451	
BIE480	Internship	3	3	Program Approval	
BIE410	Biomechanics and Modelling of Human Movement	3	3	BIE302 BIE304	
BIE411	Cellular and Molecular Biomechanics	3	3	BIE201 BIE304	
BIE412	Rehabilitation Engineering	3	3	BIE304	
BIE413	Biomedical Algorithms and Solutions	3	3	BIE304	
BIE414	Image Processing	3	3	BIE371	
BIE415	Biomedical Optics	3	3	BIE302 BIE371	
BIE416	Medical Devices Design and Manufacturing	3	3	BIE302 BIE304	
BIE495	Special Topics in Biomedical Engineering	3	3	Program Approval	
BIE496	Special Topics in Instrumentation Engineering	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in
Bioresources and Agricultural Engineering

2024-2025

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Bioresources and Agricultural Engineering (BAE) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: BAE credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	43
Program Requirements	53 (Including 9 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (43 Credits)

Table 3.1: Compulsory courses for Math and Science (21 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT201	Calculus III	3	3	MAT102	
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
CHM101	Chemistry I	3	3	IMP099 or Equivalent	
CHM105	Chemistry I Lab	1	3		CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	

Table 3.2: Compulsory courses for Engineering (22 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
ENG207	Programming	3	3	MAT202	
ENG208	Introduction to Energy and Sustainability	3	3	PHY102 CHM105	
ENG209	Statics and Strength of Materials	3	3	PHY102 CHM101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
				MAT240	
ENG309	Engineering Project Management and Economics	3	3	ENG207 ENG208	

4. Program Requirements (53 Credits)

Table 4.1: Compulsory courses (44 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BIO101	Biology	3	3	IMP099 or Equivalent	
BAE101	Introduction to Bioresources and Agriculture Engineering	3	3	BIO101	BAE102
BAE102	Introduction to Bioresources and Agriculture Engineering Lab	1	3		BAE101
ESE211	Industrial Electronics	3	3	ENG205	
BAE230	Mechanical Systems in Agriculture I	3	3	ENG209	BAE231
BAE231	Mechanical Systems in Agriculture I Lab	1	3		BAE230
BAE310	Remote Sensing Data and Methods	3	3	MAT201	
BAE320	Agricultural Structures Planning	3	3	PHY102 CHM101	
BAE330	Mechanical Systems in Agriculture II	3	3	BAE230	BAE331
BAE331	Mechanical Systems in Agriculture II Lab	1	3		BAE330
BAE340	Microbiology and Food Safety	3	3	CHM101 BIO101	BAE341
BAE341	Microbiology and Food Safety Lab	1	3		BAE340
BAE360	Bioresource Engineering	3	3	BAE101 ENG208	
BAE430	Mechanical Systems in Agriculture III	3	3	BAE330	
BAE450	Agricultural Robotics and Automation	3	3	ENG205	BAE451
BAE451	Agricultural Robotics and Automation Lab	1	3		BAE450
BAE490	Capstone Design 1	3	3	Pass 96 CH	
BAE491	Capstone Design 2	3	3	BAE490	

Table 4.2: Elective courses, students should select three courses (9 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BAE401	Lean Six Sigma	3	3	BAE101	
BAE402	Controlled Environment Systems	3	3	BAE360	
BAE423	Integrated Engineered Solutions in the Food-Water-Energy Nexus	3	3	BAE340	
BAE427	Ecological Systems Engineering Design	3	3	BAE320	
BAE455	Bioconversion	3	3	BAE320 BAE330	
BAE461	Aquaponics Engineering	3	3	BAE360	
BAE463	Biosystems Analysis and Design	3	3	BAE360	
BAE468	Controlled Environment Engineering	3	3	BAE360	
BAE471	Food Processing Plant Sanitation	3	3	BAE340	
BAE473	Food safety	3	3	BAE340	
BAE475	Geomatics	3	3	BAE310	
BAE480	Internship	3	3	Program Approval	
BAE495	Special Topics in Bioresources	3	3	Program Approval	
BAE496	Special Topics in Agricultural Engineering	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in

Computer Systems Engineering

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Computer Systems Engineering (CME) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: CME credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	55
Program Requirements	41 (Including 6 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (55 Credits)

Table 3.1: Compulsory courses for Math and Science (30 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
MAT102	Calculus II	3	3	MAT101	
MAT221	Number Theory	3	3	MAT102	
MAT120	Discrete Mathematics	3	3	IMP099 or Equivalent	
BIO101 or CHM101	Biology I or Chemistry I	3	3	IMP099 or Equivalent	
BIO105 or CHM105	Biology I Lab or Chemistry I Lab	1	3		BIO101 or CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202 MAT240	

Table 3.2: Compulsory courses for Computing (25 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS120	Computational Thinking & Programming	3	3	MAT120	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS121	Computational Thinking & Programming Lab	1	3		CCS120
CCS200	Digital Logic and Design	3	3	PHY101	
CCS220	Object-Oriented Design & Programming	3	3	CCS120	
CCS221	Object-Oriented Design & Programming Lab	1	3		CCS220
CCS230	Fundamentals of Database Systems	3	3	CCS220 MAT120	
CCS231	Fundamentals of Database Systems Lab	1	3		CCS230
CCS241	Fundamentals of Computer Networks	3	3	CCS200	
CCS270	Data Structures and Algorithms	3	3	CCS220	
CCS271	Data Structures and Algorithms Lab	1	3		CCS270
CCS320	Fundamentals of Operating Systems	3	3	CCS270	

4. Program Requirements (41 Credits)

Table 4.1: Compulsory courses (35 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
CME220	Introduction to Computer Systems Engineering	3	3	CCS200	
CME310	Computer Architecture and Organization	3	3	CCS200	
CME311	Computer Architecture and Organization Lab	1	3		CME310
CME341	Systems and Signal Processing	3	3	ENG205	
CME360	Network and System Security	3	3	CCS241	
CME410	Programming for Computer Engineering	3	3	CCS220	
CME411	Programming for Computer Engineering Lab	1	3		CME410

CME420	Embedded and Microprocessor Systems	3	3	CME310	
CME421	Embedded and Microprocessor Systems Lab	1	3		CME420
CME430	Digital Systems Design	3	3	CME310	
CME431	Digital Systems Design Lab	1	3		CME430
CME490	Capstone Design 1	3	3	Pass 96 CH	
CME491	Capstone Design 2	3	3	CME490	

Table 4.2: Elective courses, students should select two courses (6 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CME480	Internship	3	3	Program Approval	
CCS330	Web Engineering	3	3	CCS230	
CME435	Formal Language and Automata	3	3	CCS270	
CME440	Real-time systems	3	3	CME310	
CME441	VHDL Programming	3	3	CME410	
CME442	Parallel and Distributed Computing	3	3	CME341	
CME443	Simulation Modeling and Analysis	3	3	CME310	
CME444	Principles Artificial Intelligence	3	3	CME310	
CME445	Principles Blockchain Technology	3	3	CME310	
CME446	Principles Quantum Computing	3	3	CME310	
CME495	Special Topic in Computer Systems	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in

Cybersecurity Engineering

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Cybersecurity Engineering (CSE) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: CSE credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	55
Program Requirements	41 (Including 6 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)
Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)
Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (55 Credits)

Table 3.1: Compulsory courses for Math and Science (26 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT221	Number Theory	3	3	MAT102	
MAT120	Discrete Mathematics	3	3	IMP099 or Equivalent	
BIO101 or CHM101	Biology I or Chemistry I	3	3	IMP099 or Equivalent	
BIO105 or CHM105	Biology I Lab or Chemistry I Lab	1	3		BIO101 or CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202 MAT240	

Table 3.2: Compulsory courses for Computing (29 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS120	Computational Thinking & Programming	3	3	MAT120	
CCS121	Computational Thinking & Programming Lab	1	3		CCS120
CCS200	Digital Logic and Design	3	3	PHY101	

CCS220	Object-Oriented Design & Programming	3	3	CCS120	
CCS221	Object-Oriented Design & Programming Lab	1	3		CCS220
CCS230	Fundamentals of Database Systems	3	3	CCS220 MAT120	
CCS231	Fundamentals of Database Systems Lab	1	3		CCS230
CCS241	Fundamentals of Computer Networks	3	3	CCS200	
CCS270	Data Structures and Algorithms	3	3	CCS220	
CCS271	Data Structures and Algorithms Lab	1	3		CCS270
CCS320	Fundamentals of Operating Systems	3	3	CCS270	
CCS330	Web Engineering	3	3	CCS230	
CCS331	Web Engineering Lab	1	3		CCS330

4. Program Requirements (41 Credits)

Table 4.1: Compulsory courses (35 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CSE210	Fundamentals of Cyber Security Engineering	3	3	MAT202	
CSE310	Cryptography and Data Security	3	3	CSE210	
CSE311	Cryptography and Data Security Lab	1	3		CSE310
CSE325	Cybersecurity Risk Management	3	3	CSE210	
CSE326	Cybersecurity Risk Management Lab	1	3		CSE325
CSE341	Network Security	3	3	CCS241	
CSE360	Ethical Hacking and Cyber Laws	3	3	GEN150 CSE210	
CSE410	Digital Forensics	3	3	CSE310	
CSE411	Digital Forensics Lab	1	3		CSE410
CSE420	Software Security	3	3	CCS320	
CSE421	Software Security Lab	1	3		CSE420
CSE430	Web Security	3	3	CSE210	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
				CCS330	
CSE431	Web Security Lab	1	3		CSE430
CSE490	Capstone Design 1	3	3	Pass 96 CH	
CSE491	Capstone Design 2	3	3	CSE490	

Table 4.2: Elective courses, students should select two courses (6 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CSE480	Internship	3	3	Program Approval	
CSE441	Distributed Network Security	3	3	CSE341	
CSE442	IT Infrastructure Protection	3	3	CSE325	
CSE443	Cyber Security Governance and Compliance	3	3	CSE360	
CSE445	Operating System Security	3	3	CCS320	
CSE446	Fundamentals of Data Science & AI	3	3	CSE310	
CSE495	Special Topics in Cybersecurity	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in

Data Science and Artificial Intelligence

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Data Science and Artificial Intelligence (DAI) necessitates the successful completion of a total of 120 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 120 credit hours are distributed across requirements:

Table 1: DAI credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	40
Program Requirements	44 (Including 6 CH electives)
Total Credit Hours	120

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

Course Code	Course Title	Credit hours	Contact hours
ENI140	Design Thinking	3	3
ENI150	Innovation in Business Models	3	3
ENI160	Innovation and Globalization	3	3

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (40 Credits)

Table 3.1: Compulsory courses for Math and Science (17 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT120	Discrete Mathematics	3	3	IMP099 or Equivalent	
BIO101 or CHM101	Biology I or Chemistry I	3	3	IMP099 or Equivalent	
BIO105 or CHM105	Biology I Lab or Chemistry I Lab	1	3		BIO101 or CHM101
MAT202	Linear Algebra	3	3	MAT101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	

Table 3.2: Compulsory courses for Computing (23 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS120	Computational Thinking & Programming	3	3	MAT120	
CCS121	Computational Thinking & Programming Lab	1	3		CCS120
CCS220	Object-Oriented Design & Programming	3	3	CCS120	
CCS221	Object-Oriented Design & Programming Lab	1	3		CCS220
CCS230	Fundamentals of Database Systems	3	3	CCS220 MAT120	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS231	Fundamentals of Database Systems Lab	1	3		CCS230
CCS270	Data Structures and Algorithms	3	3	CCS220	
CCS271	Data Structures and Algorithms Lab	1	3		CCS270
CCS342	IT Infrastructure	3	3	INF120	
CCS330	Web Engineering	3	3	CCS230	
CCS331	Web Engineering Lab	1	3		CCS330

4. Program Requirements (44 Credits)

Table 4.1: Compulsory courses (38 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
DAI230	Mathematics for Data Science & AI	3	3	MAT120	
DAI250	Fundamentals of Data Science & AI	3	3	DAI230	
DAI251	Fundamentals of Data Science & AI Lab	1	3		DAI250
DAI310	Machine Learning	3	3	DAI250	
DAI311	Machine Learning Lab	1	3		DAI310
DAI330	Data Warehousing and Data Mining	3	3	CCS230	
DAI331	Data Warehousing and Data Mining Lab	1	3		DAI330
DAI351	Advanced Machine Learning	3	3	DAI310	
DAI352	Advanced Machine Learning Lab	1	3		DAI351
DAI374	Data Ethics, Governance, and Laws	3	3	DAI351	
DAI421	Data Analytics and Visualization	3	3	DAI250	
DAI430	Big Data Systems	3	3	DAI330	
DAI431	Big Data Systems Lab	1	3		DAI430
DAI440	Distributed Computing	3	3	CCS342	
DAI490	Capstone Design 1	3	3	Pass 96 CH	
DAI491	Capstone Design 2	3	3	DAI490	

Table 4.2: Elective courses, students should select two courses (6 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
DAI480	Internship	3	3	Program Approval	
DAI432	Security Aspects of Data Science & AI	3	3	DAI330 DAI351	
DAI462	Computer Vision and Pattern Recognition	3	3	DAI351	
DAI463	Natural Language Processing	3	3	DAI351	
DAI475	Business Intelligence and Decision Support Systems	3	3	DAI351	
DAI476	Data Analytics for Risk Management & Strategic Planning	3	3	DAI330	
DAI495	Special topics in Data Science	3	3	Program Approval	
DAI496	Special topics in Artificial Intelligence	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in Energy Systems Engineering

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Energy Systems Engineering (ESE) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: ESE credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	43
Program Requirements	53 (Including 9 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours		
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (43 Credits)

Table 3.1: Compulsory courses for Math and Science (21 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT201	Calculus III	3	3	MAT102	
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
CHM101	Chemistry I	3	3	IMP099 or Equivalent	
CHM105	Chemistry I Lab	1	3		CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	

Table 3.2: Compulsory courses for Engineering (22 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
ENG207	Programming	3	3	MAT202	
ENG208	Introduction to Energy and Sustainability	3	3	PHY102 CHM105	
ENG209	Statics and Strength of Materials	3	3	PHY102 CHM101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
				MAT240	
ENG309	Engineering Project Management and Economics	3	3	ENG207 ENG208	

4. Program Requirements (53 Credits)

Table 4.1: Compulsory courses (44 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ESE211	Industrial Electronics	3	3	ENG205	
ESE301	Thermodynamics	3	3	MAT240 PHY102	
ESE302	Thermo-fluid systems	3	3	ESE301 ENG308	
ESE305	Thermal Systems Lab	1	3	ESE302	
RME304	Instrumentation, Sensors, and Actuators	3	3	ESE211	
RME352	Digital Systems Design & Microcontrollers	3	3	ENG206 ENG207	
RME353	Digital Systems Design & Microcontrollers Lab	1	3		RME352
ESE312	Electrical Machines and Drives	3	3	ESE211	
ESE313	Electrical Machines and Drives Lab	1	3	ESE312 ENG206	
ESE314	Power Systems Analysis	3	3	ENG308 ESE312	
ESE315	Power Systems Lab	1	3	ESE314 ESE313	
ESE321	Renewable Energy Conversion Systems	3	3	ENG208 ESE301 ESE312	
RME360	Control Systems Analysis & Design	3	3	MAT201 MAT240	
ESE401	Power Plants	3	3	ESE302	
ESE402	Energy Efficient Buildings	3	3	ESE302 ENG209	
ESE425	Renewable Energy Conversion Systems Lab	1	3	ESE321 ESE401	ESE315
ESE490	Capstone Design 1	3	3	Pass 96 CH	
ESE491	Capstone Design 2	3	3	ESE490	

Table 4.2: Elective courses, students should select three courses (9 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ESE440	Solar Thermal Systems	3	3	ESE302 ESE321	
ESE441	Energy Storage Systems	3	3	ESE302 ESE314	
ESE442	Refrigeration	3	3	ESE302 ESE321	
ESE443	Petroleum Engineering	3	3	ESE302 ESE321	
ESE450	Power Electronics Conversion Systems	3	3	ESE312	
ESE451	Power Systems Protection	3	3	ESE314	
ESE452	Power Systems Generation, Transmission and Distribution	3	3	ESE314	
ESE453	Smart Grids	3	3	ESE314 ESE321	
ESE461	Techno-economic Modeling of Energy Systems	3	3	ESE314 ESE321 ESE401	
ESE462	Fuel Cell & Hydrogen Production Technology	3	3	ESE321	
ESE480	Internship	3	3	Program Approval	
ESE495	Special Topics in Energy Systems Engineering	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in Environmental and Sustainability Engineering

2024-2025

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Environmental and Sustainability Engineering (EES) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: EES credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	43
Program Requirements	53 (Including 9 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours		
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (43 Credits)

Table 3.1: Compulsory courses for Math and Science (21 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT201	Calculus III	3	3	MAT102	
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
CHM101	Chemistry I	3	3	IMP099 or Equivalent	
CHM105	Chemistry I Lab	1	3		CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	

Table 3.2: Compulsory courses for Engineering (22 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
ENG207	Programming	3	3	MAT202	
ENG208	Introduction to Energy and Sustainability	3	3	PHY102 CHM105	
ENG209	Statics and Strength of Materials	3	3	PHY102 CHM101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
				MAT240	
ENG309	Engineering Project Management and Economics	3	3	ENG207 ENG208	

4. Program Requirements (53 Credits)

Table 4.1: Compulsory courses (44 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BIO101	Biology I	3	3	IMP099 or Equivalent	
ESE301	Thermodynamics	3	3	MAT240 ENG209	
ESE302	Thermo-fluid systems	3	3	ESE301 ENG308	
ESE305	Thermal Systems Lab	1	3	ESE302	
EES301	Environmental Chemistry	3	3	CHM101 CHM105	
EES302	Environmental Management Systems	3	3	ENG208	
EES303	Sustainability Fundamentals and Development Strategy	3	3	ENG208 BIO101	
EES304	Water Supply and Sewerage Engineering	3	3	ESE302	
EES305	Water Supply and Sewerage Engineering Lab	1	3		EES304
EES306	Air and Water Pollution Control and Waste-Water Treatment	3	3	BIO101 EES301	
EES307	Soil, Solid, and Hazardous Waste Control	3	3	BIO101 EES301	
EES308	Waste Management and Conversion Technology	3	3	ENG208 EES301	
EES401	Environmental Impact Assessment and Practices	3	3	ESE302 ENG304	
EES402	Sustainable Buildings Design	3	3	ENG208 EES303	
EES490	Capstone Design 1	3	3	Pass 96 CH	
EES491	Capstone Design 2	3	3	EES490	

Table 4.2: Elective courses, students should select three courses (9 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
EES451	Carbon Footprint Analysis and Reduction	3	3	EES302 EES303	
EES452	Economics for environmental policy and management	3	3	EES302 EES303 EES401	
EES453	Climate Changes and Mitigation	3	3	EES302 EES303 EES401	
EES454	Natural Ecosystems and Resources Conservation	3	3	EES302 EES303 EES401	
EES455	Introduction to risk assessment and management	3	3	ENG309	
EES461	Kuwait's Environmental Issues	3	3	EES302 EES303	
EES480	Internship	3	3	Program Approval	
EES495	Special Topics in Environmental Engineering	3	3	Program Approval	
EES496	Special Topics in Sustainability Engineering	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in
Material Science and Engineering

2024-2025

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Material Science and Engineering (MSE) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: MSE credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	43
Program Requirements	53 (Including 9 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)
Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (43 Credits)
Table 3.1: Compulsory courses for Math and Science (21 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT201	Calculus III	3	3	MAT102	
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
CHM101	Chemistry I	3	3	IMP099 or Equivalent	
CHM105	Chemistry I Lab	1	3		CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	

Table 3.2: Compulsory courses for Engineering (22 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
ENG207	Programming	3	3	MAT202	
ENG208	Introduction to Energy and Sustainability	3	3	PHY102 CHM105	
ENG209	Statics and Strength of Materials	3	3	PHY102 CHM101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202	

				MAT240	
ENG309	Engineering Project Management and Economics	3	3	ENG207 ENG208	

4. Program Requirements (53 Credits)

Table 4.1: Compulsory courses (44 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MSE211	Introduction to Materials Science and Engineering	3	3	ENG209	
MSE301	Thermodynamics of Materials	3	3	CHM101	
MSE302	Materials Characterization	3	3	MSE211	
MSE303	Structure & Bonding of Solids	3	3	MSE211	
MSE304	Physical Chemistry	3	3	MSE302	
MSE305	Electronic Properties of Materials	3	3	MSE211	
MSE306	Mechanical and Thermal Properties of Materials	3	3	MSE211	
MSE307	Nanomaterials	3	3	MSE303	
MSE308	Materials Characterization Laboratory 1	1	3		MSE302
MSE309	Materials Synthesis Laboratory	1	3	MSE303 MSE304	
MSE310	Electronic Device Fabrication Laboratory	1	3	ENG206	MSE305
MSE311	Material Property Measurement Laboratory	1	3	MSE305 MSE306	
MSE400	Diffusion and Kinetics in Materials	3	3	MSE301 MSE303	
MSE401	Phase Diagrams & Phase Transformations	3	3	MAT201 MSE306 MSE308	
MSE402	Materials for Renewable Energy & Storage Technologies	3	3	MSE305 MSE306 ENG208	
MSE403	Materials Characterization Laboratory 2	1	3	MSE302 MSE308	
MSE490	Capstone Design 1	3	3	Pass 96 CH	
MSE491	Capstone Design 2	3	3	MSE490	

Table 4.2: Elective courses, students should select three courses (9 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MSE382	Organic Chemistry	3	3	CHM101	
MSE484	Material Synthesis Techniques	3	3	MSE303	
MSE485	Material Modeling & Simulation	3	3	MSE302	
MSE486	Polymer Science and Engineering	3	3	MSE302	
MSE487	Composite Material Design and Engineering	3	3	MSE302	
MSE488	Materials Engineering for Harsh Environments	3	3	MSE302	
MSE480	Internship	3	3	Program Approval	
MSE495	Special Topics in Material Science Engineering	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in
Robotics and Mechatronics Engineering

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Robotics and Mechatronics Engineering (RME) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: RME credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	43
Program Requirements	53 (Including 9 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)
Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (43 Credits)
Table 3.1: Compulsory courses for Math and Science (21 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT201	Calculus III	3	3	MAT102	
PHY102	Physics II	3	3	PHY101 MAT101	
PHY107	Physics II Lab	1	3	PHY105	PHY102
CHM101	Chemistry I	3	3	IMP099 or Equivalent	
CHM105	Chemistry I Lab	1	3		CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	

Table 3.2: Compulsory courses for Engineering (22 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Electrical and Electronic Circuits	3	3	PHY102 MAT102	
ENG206	Electrical and Electronic Circuits Lab	1	3	ENG205 PHY107	
ENG207	Programming	3	3	MAT202	
ENG208	Introduction to Energy and Sustainability	3	3	PHY102 CHM105	
ENG209	Statics and Strength of Materials	3	3	PHY102 CHM101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202	

| | | | | MAT240 | |

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG309	Engineering Project Management and Economics	3	3	ENG207 ENG208	

4. Program Requirements (53 Credits)

Table 4.1: Compulsory courses (44 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ESE211	Industrial Electronics	3	3	ENG205	
RME301	Introduction to Mechatronics and Robotics	3	3	ENG205 ENG209	
RME302	Introduction to Mechatronics and Robotics Lab	1	3		RME301
RME304	Instrumentation, Sensors, and Actuators	3	3	ESE211	
RME352	Digital Systems Design & Microcontrollers	3	3	ENG206 ENG207	
RME353	Digital Systems Design & Microcontrollers Lab	1	3		RME352
RME360	Control Systems Analysis & Design	3	3	MAT201 MAT240	
RME361	Control Systems Analysis & Design Lab	1	3		RME360
MSE211	Introduction to Materials Science and Engineering	3	3	ENG209	
RME363	Engineering Mechanisms for Automation	3	3	ENG209	
RME401	Robotics, Dynamics & Controls	3	3	RME301	
RME402	Robotics, Dynamics & Controls Lab	1	3		RME401
RME403	Computer-Integrated Manufacturing Systems	3	3	RME301	
RME430	Digital Signal Processing	3	3	ENG304 RME352	
RME431	Digital Signal Processing Lab	1	3		RME430
RME460	Design of Machine Elements	3	3	RME304	
RME490	Capstone Design 1	3	3	Pass 96 CH	
RME491	Capstone Design 2	3	3	RME490	

Table 4.2: Elective courses, students should select three courses (9 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
RME484	Autonomous and Intelligent Mobile Robots	3	3	RME360 RME401	
RME481	Machine Vision and Image Processing	3	3	RME430	
RME482	Robotic Manipulators Design	3	3	MSE211 RME352	
RME483	Robotics Project Management	3	3	RME301 ENG309	
RME480	Internship	3	3	Program Approval	
RME485	Advanced Programmable Logic Controllers	3	3	RME352	
ESE312	Electrical Machines & Drives	3	3	ESE211	
RME486	Nano Mechatronics	3	3	RME352	
RME487	Machine Learning for Mechatronics Systems	3	3	RME360	
RME495	Special Topics in Mechatronics	3	3	Program Approval	
RME496	Special Topics in Robotics	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**

Bachelor of Science in Software Engineering 2023-2024 Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Software Engineering (SWE) necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: SWE credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	55
Program Requirements	41 (Including 6 CH electives)
Total Credit Hours	132

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		
ENI140	Design Thinking	3	3		

| ENI150 | Innovation in Business Models | 3 | 3 | | |
| ENI160 | Innovation and Globalization | 3 | 3 | | |

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (55 Credits)

Table 3.1: Compulsory courses for Math and Science (26 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT221	Number Theory	3	3	MAT102	
MAT120	Discrete Mathematics	3	3	IMP099 or Equivalent	
BIO101 or CHM101	Biology I or Chemistry I	3	3	IMP099 or Equivalent	
BIO105 or CHM105	Biology I Lab or Chemistry I Lab	1	3		BIO101 or CHM101
MAT202	Linear Algebra	3	3	MAT101	
MAT240	Differential Equations	3	3	MAT102	
ENG304	Engineering Probability & Statistics	3	3	MAT102	
ENG308	Numerical Methods	3	3	MAT202 MAT240	

Table 3.2: Compulsory courses for Computing (32 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS120	Computational Thinking & Programming	3	3	MAT120	
CCS121	Computational Thinking & Programming Lab	1	3		CCS120
CCS200	Digital Logic and Design	3	3	PHY101	
CCS220	Object-Oriented Design & Programming	3	3	CCS120	

CCS221	Object-Oriented Design & Programming Lab	1	3		CCS220
CCS230	Fundamentals of Database Systems	3	3	CCS220 MAT120	
CCS231	Fundamentals of Database Systems Lab	1	3		CCS230
CCS241	Fundamentals of Computer Networks	3	3	CCS200	
CCS270	Data Structures and Algorithms	3	3	CCS220	
CCS271	Data Structures and Algorithms Lab	1	3		CCS270
CCS320	Fundamentals of Operating Systems	3	3	CCS270	
CCS330	Web Engineering	3	3	CCS230	
CCS331	Web Engineering Lab	1	3		CCS330

4. Program Requirements (41 Credits)

Table 4.1: Compulsory courses (35 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
SWE301	Software Process and Methodologies	3	3	CCS230	
SWE305	Software Requirements Engineering	3	3	CCS230	
SWE306	Software Requirements Engineering Lab	1	3		SWE305
SWE310	Human-Computer Interaction	3	3	SWE301	
SWE311	Human-Computer Interaction Lab	1	3		SWE310
SWE340	Software Design and Architecture	3	3	SWE305	
SWE341	Software Design and Architecture Lab	1	3		SWE340
SWE345	Software Modelling and Analysis	3	3	SWE301	
SWE420	Software Construction and Evolution	3	3	SWE340	
SWE421	Software Construction and Evolution Lab	1	3		SWE420

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
SWE430	Software Testing and Quality Assurance	3	3	SWE340	
SWE431	Software Testing and Quality Assurance Lab	1	3		SWE430
SWE440	Software Security and Analysis	3	3	SWE430	
SWE490	Capstone Design 1	3	3	Pass 96 CH	
SWE491	Capstone Design 2	3	3	SWE490	

Table 4.2: Elective courses, students should select two courses (6 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
SWE480	Internship	3	3	Program Approval	
SWE441	Software Reliability and Software Quality	3	3	SWE340	
SWE442	Software Engineering Ethics	3	3	SWE305	
SWE443	Software Project Management	3	3	SWE340 SWE345	
SWE444	Modern Software Methodologies	3	3	SWE345	
SWE445	Software Development and Maintenance	3	3	SWE340	
SWE447	Cloud Computing	3	3	CCS330	
SWE495	Special topics in Software Engineering	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**