

Bachelor of Science in Sustainability

Students who major in Sustainability study the science behind the impact of human activities on the environment, and learn to develop sustainability solutions through the application of new technologies, business strategy, and social policy.

In the BS in Sustainability program students will take courses that provide in-depth disciplinary knowledge and skills in the interdisciplinary field of Sustainability, as well as electives from courses offered in other programs. In addition, students will complete an internship and an independent Capstone project. In semester 6 and 7, students will have the opportunity to choose a concentration to specialize in one of the three pillars of Sustainability (economy, society or environment);

Program Goals

1. To educate students with the knowledge, skills, values and attitudes to address the interconnected global challenges of Sustainability, including climate change, environmental degradation, loss of biodiversity, poverty and inequality.
2. To provide our students with a solid understanding of the ethical principles of sustainability and how they are connected to practical issues of social justice, and environmental-economic equity.
3. To enable our students with the capacity to address the national and international environmental, societal and economic challenges facing us in the 21st century.
4. For our students to have a grounded understanding of how the 3 pillars of sustainability are interrelated, and be able to use this knowledge in systems thinking for research and for practical problem-solving.
5. To give our students the experience of working in an interdisciplinary way and to have the capability to work productively and effectively within cross-disciplinary teams.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. **Conceptual Knowledge:** Apply the principles of sustainability in various environmental, social and economic contexts.
(Level 7 of QFE: Knowledge)
2. **Communication Skills:** Communicate confidently and effectively on the subject of sustainability using advanced written, oral and visual communication skills.
(Level 7 of QFE: Skills, Autonomy and responsibility)

3. **Problem Solving & Critical Thinking:** Assess information from various sources to develop logical arguments for practical and sustainable solutions to environmental problems.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility)
4. **Research Skills:** Apply scientific methods and tools to collect and analyze data on real world problems relating to sustainability.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility)
5. **Environmental Awareness and Responsibility:** Analyze contemporary environmental issues at both local and global scales and incorporate socio-cultural norms while taking on professional responsibilities in environmental stewardship.
(Level 7 of QFE: Autonomy and responsibility, Role in context, Self-development)
6. **Practical and Professional Engagement:** Operate professionally, ethically and autonomously in the workplace as individuals or as part of a team, or as the leader of a team.
(Level 7 of QFE: Autonomy and responsibility, Role in context, Self-development)

Concentration in Sustainable Enterprise

This concentration examines how environmental and societal sustainability can be managed and enhanced through creative and profitable business ideas. Students learn how ideas from both business and science can be combined to create novel and workable solutions to environmental issues.

Concentration Learning Outcomes

1. Justify why the transition to a sustainable enterprise economy is of critical importance to the creation of a socially just and environmentally safe operating space for humanity.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility, Role in context, Self-development)
2. Develop a strategy for an existing enterprise to transition to sustainability, or to contribute to a business plan for the development of a completely new sustainable enterprise.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility, Role in context, Self-development)

Concentration in Sustainable Policy

This concentration examines how different knowledge systems utilise scientific findings to inform sustainability policy. Students will acquire the interdisciplinary skills required for careers in the public, private, and voluntary sectors that enable them to develop, analyse, and evaluate sustainability policies, on the basis of their economic, social, and political impacts.

Concentration Learning Outcomes

1. Employ a systems approach to understanding the complex social-ecological dynamics that contribute to the development of an inclusive, resilient, and sustainable society.
(Level 7 of QFE: Knowledge, Skills, Role in context, Self-development)
2. Apply different knowledge systems in the effective design, implementation and evaluation of sustainability policies.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility, Role in context, Self-development)

Concentration in Sustainable Environments

This concentration teaches problem solving skills required for developing and implementing innovative solutions to complex problems focused on the health and welfare of environmental and human resources. Integrating the environment, health and risk management into sustainability prepares students for careers focused on protecting people from the risks associated with human impacts on the environment.

Concentration Learning Outcomes

1. Employ qualitative and quantitative methods to measure and monitor environmental problems such as climate change, pollution, loss of biodiversity, hazards, and threats to natural resources.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility, Role in context, Self-development)
2. Synthesize complex data sets describing environmental problems, evaluate environmentally sustainable alternatives and formulate action plans that integrate science, economic and social perspectives.
(Level 7 of QFE: Knowledge, Skills, Autonomy and responsibility, Role in context, Self-development)

Degree Requirements

Required Credit Hours: 120 hours

General Education	40 CHs
Program Required Courses	31 CHs
Internship and Capstone Project	14 CHs
Concentration Courses	22 CHs
Electives from other concentration	7 CHs
Electives from other programs	6 CHs
General Education	40 CHs
ICB101	Strategic Learning and Growth 4
ICB102	Expressive Clarity 3

IAR110 or IAR111	Arabic Lab 1 (N): Speaking to Engage & Persuade Arabic Lab 1 (NN): Arabic Language & Culture for Beginners	1
IDS101	Critique and Communication	4
IAR210 or IAR211	Arabic Lab 2 (N): Writing to Inform Arabic Lab 2 (NN): Arabic Language & Culture for Intermediate Proficiency	1
IDS102	Applied Creative and Critical Thinking	4
IDS103	Statistical Intuitions & Applications	4
IDS104	Deriving Insights from Evidence	4
IDS105	Systems and Society	4
IDS220	Fundamentals of Innovation and Entrepreneurship	3
IAH244	Ethical Systems, Moral Dilemmas	4

Program Required Courses		31 CHs
ISU201	Earth Systems	3
ISU202	Principles of Sustainability	3
ISU203	Evolution Across Multiple Scales	4
ISU204	Introduction to Environmental Health	3
ISU205	Introduction to Environmental Economy and Policy	3
ISU206	Chemical Structure and Reactivity	4
ISU207	Ecology and Conservation	4
ISU208	Sustainability Policy and Planning	3
ISU209	Physics of Life	4
Internship and Capstone Project courses		14 CHs
IDS391	Capstone Seminar I	3
IDS493	Capstone Project I	4
IDS494	Capstone Project II	4
IDS499	Internship	3

Concentration in Sustainable Enterprise courses		22 CHs
ISU301	The Sustainable Enterprise Economy	4
ISU302	Ecological Economics	4
ISU303	Measuring and Reporting Sustainability	3
ISU400	Social Entrepreneurship	3
ISU401	Organizational Change for Sustainability	4
ISU402	Impact Investment	4

Concentration in Sustainable Policy courses		22 CHs
ISU304	Sustainable Cities and Communities	4
ISU305	Social Justice and Equity	4

ISU306	Circular Economy	3
ISU403	Food and Water Security	3
ISU404	Energy Policies and Net Zero Scenarios	4
ISU405	Nutrition, Health and Sustainability	4

<i>Concentration in Sustainable Environments courses</i>		22 CHs
ISU307	Environmental Hazards and Disaster Risk	3
ISU308	Applied Microbiology	4
ISU309	Environmental Chemistry	4
ISU403	Food and Water Security	3
ISU406	Wastewater and Solid Waste Management	4
ISU407	Monitoring and Modeling Earth's Systems	4

Zayed University
College of Interdisciplinary Studies
Bachelor of Science in Sustainability
Concentration in Sustainable Enterprise
(Recommended Sequence)

	Semester 1		Credits	Semester 2		Credits
	Year 1	ICB101	Strategic Learning and Growth	4	IDS101	Critique and Communications
ICB102		Expressive Clarity	3	IAR210 or IAR211	Arabic Lab 2 (N): Writing to Inform Arabic Lab 2 (NN): Arabic Language & Culture for Intermediate Proficiency	1
IAR110 or IAR111		Arabic Lab 1 (N): Speaking to Engage & Persuade Arabic Lab 1 (NN): Arabic Language & Culture for Beginners	1			
ICB103		Applied Algorithmic Thinking	4	IDS105	Systems and Society	4
IDS102		Applied Creative and Critical Thinking	4	IDS220	Fundamentals of Innovation and Entrepreneurship	3
		Total	16		Total	16
Year 2	Semester 3			Semester 4		
	IDS204	Deriving Insights from Evidence	4	IAH244	Ethical Systems, Moral Dilemmas	4
	ISU201	Earth Systems	3	ISU204	Introduction to Environmental Health	3
	ISU202	Principles of Sustainability	3	ISU205	Introduction to Environmental Economy and Policy	3
	ISU203	Evolution Across Multiple Scales	4	ISU206	Chemical Structure and Reactivity	4
	Elective	Elective from other programs	3			
		Total	17		Total	14
Year 3	Semester 5			Semester 6		
	ISU207	Ecology and Conservation	4	IDS391	Capstone Seminar I	3
	ISU208	Sustainability Policy and Planning	3	ISU301	The Sustainable Enterprise Economy	4
	ISU209	Physics of Life	4	ISU302	Ecological Economics	4
	Elective	Elective from other programs	3	ISU303	Measuring and Reporting Sustainability	3
		Total	14		Total	14
Year 4	Semester 7			Semester 8		
	IDS493	Capstone Project I	4	IDS499	Internship	3
	ISU400	Social Entrepreneurship	3	IDS494	Capstone Project II	4
	ISU401	Organizational Change for Sustainability	4	Elective	Elective from other concentrations	3
	ISU402	Impact Investment	4	Elective	Elective from other concentrations	4
		Total	15		Total	14

Total = 120 Credit Hours

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	Semester 1			Credits	Semester 2			Credits
	Year 1	ICB101	Strategic Learning and Growth		4	IDS101	Critique and Communications	
ICB102		Expressive Clarity	3	IAR210 or IAR211	Arabic Lab 2 (N): Writing to Inform Arabic Lab 2 (NN): Arabic Language & Culture for Intermediate Proficiency	4		
IAR110 or IAR111		Arabic Lab 1 (N): Speaking to Engage & Persuade Arabic Lab 1 (NN): Arabic Language & Culture for Beginners	1	IDS103	Statistical Intuitions and Applications	4		
ICB103		Applied Algorithmic Thinking	4	IDS105	Systems and Society	4		
IDS102		Applied Creative and Critical Thinking	4	IDS220	Fundamentals of Innovation and Entrepreneurship	3		
			Total	16		Total	16	
Year 2	Semester 3			Semester 4				
	IDS204	Deriving Insights from Evidence	4	IAH244	Ethical Systems, Moral Dilemmas	4		
	ISU201	Earth Systems	3	ISU204	Introduction to Environmental Health	3		
	ISU202	Principles of Sustainability	3	ISU205	Introduction to Environmental Economy and Policy	3		
	ISU203	Evolution Across Multiple Scales	4	ISU206	Chemical Structure and Reactivity	4		
	Elective	Elective from other programs	3					
		Total	17		Total	14		
Year 3	Semester 5			Semester 6				
	ISU207	Ecology and Conservation	4	IDS391	Capstone Seminar I	3		
	ISU208	Sustainability Policy and Planning	3	ISU304	Sustainable Cities and Communities	4		
	ISU209	Physics of Life	4	ISU305	Social Justice and Equity	4		
	Elective	Elective from other programs	3	ISU306	Circular Economy	3		
		Total	14		Total	14		
Year 4	Semester 7			Semester 8				
	IDS493	Capstone Project I	4	IDS499	Internship	3		
	ISU403	Food and Water Security	3	IDS494	Capstone Project II	4		
	ISU404	Energy Policies and Net Zero Scenarios	4	Elective	Elective from other concentrations	3		
	ISU405	Nutrition, Health and Sustainability	4	Elective	Elective from other concentrations	4		
		Total	15		Total	14		

Total = 120 Credit Hours

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Concentration in Sustainable Environments
(Recommended Sequence)

	Semester 1			Semester 2		
			Credits			Credits
Year 1	ICB101	Strategic Learning and Growth	4	IDS101	Critique and Communications	4
	ICB102	Expressive Clarity	3	IAR210 or IAR211	Arabic Lab 2 (N): Writing to Inform	1
	IAR110 or IAR111	Arabic Lab 1 (N): Speaking to Engage & Persuade	1	Arabic Lab 2 (NN): Arabic Language & Culture for Intermediate Proficiency		
		Arabic Lab 1 (NN): Arabic Language & Culture for Beginners			IDS103	Statistical Intuitions and Applications
	ICB103	Applied Algorithmic Thinking	4	IDS105	Systems and Society	4
	IDS102	Applied Creative and Critical Thinking	4	IDS220	Fundamentals of Innovation and Entrepreneurship	3
		Total	16		Total	16
Year 2	Semester 3			Semester 4		
	IDS204	Deriving Insights from Evidence	4	IAH244	Ethical Systems, Moral Dilemmas	4
	ISU201	Earth Systems	3	ISU204	Introduction to Environmental Health	3
	ISU202	Principles of Sustainability	3	ISU205	Introduction to Environmental Economy and Policy	3
	ISU203	Evolution Across Multiple Scales	4	ISU206	Chemical Structure and Reactivity	4
	Elective	Elective from other programs	3			
		Total	17		Total	14
Year 3	Semester 5			Semester 6		
	ISU207	Ecology and Conservation	4	IDS391	Capstone Seminar I	3
	ISU208	Sustainability Policy and Planning	3	ISU307	Environmental Hazards and Disaster Risk	3
	ISU209	Physics of Life	4	ISU308	Applied Microbiology	4
	Elective	Elective from other programs	3	ISU309	Environmental Chemistry	4
		Total	14		Total	14
Year 4	Semester 7			Semester 8		
	IDS493	Capstone Project I	4	IDS499	Internship	3
	ISU403	Food and Water Security	3	IDS494	Capstone Project II	4
	ISU406	Wastewater and Solid Waste Management	4	Elective	Elective from other concentrations	3
	ISU407	Monitoring and Modeling Earth's Systems	4	Elective	Elective from other concentrations	4
		Total	15		Total	14

Total = 120 Credit Hours