



# The Hashemite University

## Sustainability Education Report: list of Degrees and Courses

2022/2023



## Table of Contents

<b>Introduction:</b> .....	3
<b>Degrees Related to Climate Science and Environmental Sustainability:</b> .....	3
<b>Courses Related to Climate Science and Environmental Sustainability:</b> .....	4
<b>University compulsory courses</b> .....	5
<b>University Elective Requirements</b> .....	5
<b>Prince El- Hassan Bin Talal for Natural Resources &amp; Environment</b> .....	6
<b>Faculty of Engineering</b> .....	6
<b>Faculty of Nursing</b> .....	7
<b>List of selected courses for detailed descriptions</b> .....	8
<b>Empowering Students for a Sustainable Future: The Role of the Renewable Energy Center:</b> .....	9
<b>Practical Training and Skill Development:</b> .....	9
<b>Complementing Academic Courses:</b> .....	10
<b>Supporting Graduation Projects:</b> .....	10
<b>Internship Opportunities:</b> .....	11



## Introduction:

At the Hashemite University, fostering sustainable future stands at the core of our educational mission. We are dedicated to empowering our students with the knowledge, skills, and expertise needed to address pressing climate and environmental challenges. As part of our comprehensive approach to sustainability education, we offer a wide range of degrees and courses that emphasize climate science and environmental sustainability. Through rigorous research, innovative thinking, and collaboration, our students and faculty have worked diligently to address pressing environmental challenges. In the following sections, we highlight the impressive range of degrees and courses offered by the university that focus on climate science and environmental sustainability. Furthermore, we delve into the specific faculties, such as the Faculty of Engineering and the Prince El-Hassan Bin Talal for Natural Resources & Environment, where sustainability principles are seamlessly integrated into the curriculum.

## Degrees Related to Climate Science and Environmental Sustainability:

Our university takes pride in providing students with diverse opportunities to specialize in fields that directly impact climate change and environmental preservation. Through cutting-edge master's programs such as Climate Changes and Arid Land Sustainability, Environmental Sciences and Management, Management and Development of Tourism and Heritage Sites, and more, students delve into critical aspects of sustainability, equipping themselves to become change-makers in their respective domains.

1. Climate Changes and Arid Land Sustainability (Master)

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln\\_mst\\_10g\\_r\\_02\\_e.rdf&p\\_col=220000&p\\_dept=220200&college=220202&pln\\_prm2=5003&pln\\_type2=24010&envid=en](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln_mst_10g_r_02_e.rdf&p_col=220000&p_dept=220200&college=220202&pln_prm2=5003&pln_type2=24010&envid=en)

2. Environmental Sciences and Management (Master)

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln\\_mst\\_10g\\_r\\_02\\_e.rdf&p\\_col=220000&p\\_dept=220300&college=220302&pln\\_prm2=5003&pln\\_type2=24010&envid=en](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln_mst_10g_r_02_e.rdf&p_col=220000&p_dept=220300&college=220302&pln_prm2=5003&pln_type2=24010&envid=en)

3. Energy Systems (Master)

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=dept\\_crs\\_desc\\_e\\_01.rdf&envid=en&p\\_dept=40200&prgm=5003](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=dept_crs_desc_e_01.rdf&envid=en&p_dept=40200&prgm=5003)

4. Management and Development of Tourism and Heritage Sites (Master)

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=dept\\_crs\\_desc\\_e\\_01.rdf&envid=en&p\\_dept=180100&prgm=5003](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=dept_crs_desc_e_01.rdf&envid=en&p_dept=180100&prgm=5003)



5. Crises and Disasters Management (Master)

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=dept\\_crs\\_desc\\_e\\_01.rdf&envi d=en&p\\_dept=40300&prgm=5003](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=dept_crs_desc_e_01.rdf&envi d=en&p_dept=40300&prgm=5003)

6. Applied Geology (Master)

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln\\_mst\\_10g\\_r\\_02\\_e.rdf&p\\_c ol=220000&p\\_dept=220100&college=220102&pln\\_prgm2=5003&pln\\_type2=24010&e nvid=en](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln_mst_10g_r_02_e.rdf&p_c ol=220000&p_dept=220100&college=220102&pln_prgm2=5003&pln_type2=24010&e nvid=en)

7. BSc Water and environment management

[https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln\\_mst\\_10g\\_r\\_02\\_e.rdf&p\\_c ol=220000&p\\_dept=220300&college=220301&pln\\_prgm2=5001&pln\\_type2=24001&e nvid=en](https://husystems.hu.edu.jo/reports/rwservlet?stdkey&report=pln_mst_10g_r_02_e.rdf&p_c ol=220000&p_dept=220300&college=220301&pln_prgm2=5001&pln_type2=24001&e nvid=en)

8. Many more (please refer to these links

<https://hu.edu.jo/en/unitCenter/indexreg.aspx?prgm=5001>  
<https://hu.edu.jo/en/unitCenter/indexreg.aspx?prgm=5003> )

## Courses Related to Climate Science and Environmental Sustainability:

Our commitment to sustainability extends across various faculties, where we have thoughtfully integrated sustainability-related courses. Students engage with compelling topics such as Energy and its Sources, Energy Conversion, Smart Grid Technologies, Health and Nutrients, Education for Sustainable Development, Environmental Engineering, Sustainable Development of Natural Resources, and many others. These courses are carefully designed to align with the United Nations Sustainable Development Goals (SDGs) and offer students a holistic perspective on sustainable development principles and practices.

In the forthcoming subsections, we will present an extensive list of courses offered at Hashemite University and its various colleges, all of which revolve around the themes of sustainability, environmental education, and climate science. This comprehensive list encompasses a wide range of disciplines, ensuring that sustainability principles are seamlessly integrated across diverse academic domains. Among these courses, we will select a few key subjects for detailed descriptions to provide a deeper insight into the specialized knowledge and skills our students acquire. These selected courses serve as prime examples of how we equip our students with essential tools to become agents of change in addressing pressing environmental challenges and contributing to a more sustainable future. By combining theoretical foundations with practical applications, these courses exemplify Hashemite University's commitment to nurturing environmentally conscious leaders who can make a meaningful impact on a global scale.



SUSTAINABLE DEVELOPMENT GOALS



University compulsory courses

Number	Course Name	SDG Mapping
1	Entrepreneurship and Innovation	1, 4 5, 8, 9, 10, 11, 12, 13, 16, 17

University Elective Requirements

Number	Course Name	SDG Mapping
1	Energy and its Sources	7
2	Computer Ethics	9
3	Health and Nutrients	2 and 3
4	Health Education and First Aid	3
5	Sport and Health	3
6	Ethics in Natural Science	4 and 9
7	Reproductive Health	3 and 5
8	University Life of Student	4
9	Family and Child Education	4
10	Citizenship and Human Rights	16
11	Archaeology and Tourism	11 and 12
12	Economic and Management Science	8
13	Law and Ordering of Our Life	16
14	Principles of Sign Language	4
15	Humanistic Moral and Values Education	4
16	Conflict Resolution and Accept Others	16
17	Cultural Heritage in Jordan	11 and 12
18	Disability and Healthy Community	3 and 10
19	Education for Sustainable Development	4 and 12
20	Adjustment and Mental Health	3
21	Integrity Transparency and anti - Corruption	16
22	Physical Culture	3
23	Development and Environment	13 and 15
24	digital culture	4 and 9

, and many more



Prince El- Hassan Bin Talal for Natural Resources & Environment

Number	Course Name	SDG Mapping
1	Sustainability of Range & Protected Areas	2, 12 and 15
2	Environmental Model Forest	1, 2, 11, 12 & 13
3	Environmental Science	1, 2, 6, 13, 14 & 15
4	Environmental Statistics	1, 2, 6, 13, 14 & 15
5	Oil & Water Conservation	1, 2, 6, 13, 14 & 15
6	Environmental Volunteering	4
7	Environmental soil Chemistry	1, 2, 6, 13 & 15
8	Chemistry of Environmental Pollutants	1, 2, 3, 6, 7, 11 & 13
9	Reuse of Treated Wastewater	1, 2, 3, 6, 9, 11, 13, 15
10	Development and Environment	1, 2, 3, 6, 9, 11, 13 & 15
11	Sustainable Development	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
12	Environmental Management Systems	6, 12, 13, 14, 15
13	Sustainable Development of Natural Resources	2, 6, 7, 12, 13, 14, 15
14	Environmental Policy & Global Treaties	13, 17
15	Energy Resources & Environment	6, 7, 13, 15
16	Environmental Impact Assessment	6, 9, 11, 13, 15
17	Environmental Legislations	13, 16
18	Environmental Management	6, 12, 13, 14, 15

, and many more

Faculty of Engineering

Number	Course Name	SDG Mapping
1	Safety Engineering	1,3,11 and 13
2	Environmental Disasters Management	11,13,14 and 15
3	Environmental Engineering	6 and 13
4	Waste water Engineering	3 and 6
5	Environmental disaster	11,13,14 and 15
6	Energy Resources and Environment	7,8,9,11 and 13
7	Energy Conversion	7,8,9,11 and 13
8	Smart Grid Technology	7,8,9,11 and 13
9	Smart and Micro grid technologies	7,8,9,11 and 13
10	Energy Management and Audit	7,8,11 and 13
11	Solar Cells and Photovoltaic Energy Systems	7,8,11 and 13
12	Building Materials	4,8 and 9
13	Building Materials Lab	4,8 and 9
14	Construction Project Management	4,8, 9 and 16
15	Construction Contracts Administration	17
16	Transportation Engineering and planning	8, 10 and 11
17	Highway Engineering and Design	8 and 9



Number	Course Name	SDG Mapping
18	Reinforced Concrete (1)	9
19	Foundation Engineering	9, 10 and 11
20	Wastewater Engineering	3 and 6
21	Reinforced Concrete and Steel Structures for Architectural Students	9 and 11
22	Plastic Behavior and Design of Steel Structures	9 and 11
23	Transportation Engineering and Planning	8, 10 and 11
24	Plastic Behavior and Design of Steel Structures	9 and 11
25	Construction Project Management	4, 8 and 9
26	Building Materials and Lab	4, 8 and 9
27	Medical Imaging	3, 4 and 9
28	Biomedical Instrumentation (2)	3, 4 and 9
29	Biomedical Instrumentation (1)	3, 4 and 9
30	Rehabilitation Engineering	3
31	Project Management	8 and 9

### Faculty of Nursing

Number	Course Name	SDG Mapping
1	Maternal-Family Health Nursing\Theory	3
2	Maternal-Family Health Nursing\Clinical	3
3	Nursing Midwifery	3
4	Reproductive Health	3 and 5
5	Child Health Nursing	3
6	Neonatal Health Nursing	3
7	Fundamentals of Nursing	3
8	Health Promotion and Disease Prevention	3
9	Community Health Nursing	3
10	Adult Health Nursing (1)	3
11	Adult Health Nursing (2)	3
12	Critical Care Nursing	3
13	Mental Health Nursing \Theory	3
14	Mental Health Nursing \Clinical	3
15	Psychosocial Aspects of Nursing care	3
16	Emergency Nursing	3
17	Nursing Leadership and Management/ Theory	3
18	Communication Skills (Nursing)	3



List of selected courses for detailed descriptions

Number	Course Name	Descriptions
1	Energy Resources and Environment	Classification of various energy sources, Renewable and non-renewable energy sources, Pattern of energy consumption. Effects of air pollutions, Atmospheric dispersion, Environmental effects of fossil fuels. Principles of sustainable energy and environment management. Methods for evaluation of large and complex sustainable energy systems. Building studies and comparisons on energy systems and the sustainable energy mixes.
2	Sustainable Development	This course provides a holistic, cognitive ,and integrative to better understand sustainable development, and forms the nucleus and reference which the students from different disciplines & levels can use. The course is divided into four parts. The first part presents the basic concepts of Sustainable development, its requirements, strategies & indicators. The remaining three parts review the three dimensions of sustainable development: The environmental, the social, and the economic. The course focuses on Jordan. It reviews the current of environmental, social, and economic situation in Jordan, and the requirements & strategies for sustainable development from a local perspective
3	Environmental Science	Defining the environment, the ecosystem and its characteristics, as well as material and energy flow, population dynamics and its influence on the environment, dynamics of human population, water, soil and energy resources and tools to manage those resources. Students will also become more oriented to the environmental pollution of water, air, soil and noise pollution and environmental impact assessment.
4	Environmental Policy & Global Treaties	Environmental protection and legislation in relation to population growth control, administrative laws in environment including laws for protection of air, water, food, soil, and for control of noise, light and radiation hazard.
5	Smart and Micro grid technologies	simulation projects. Introduction to smart and micro-grid, distributed generation systems, the impact of renewable energy and Energy storage systems on the power grid and fault calculations, SCADA systems, Smart meters and data Communications in smart grid, Communication technologies for the smart grid, Information security for the smart grid, load forecasting for smart grid
6	Solar Cells and Photovoltaic Energy Systems	This course will provide students with Introduction to semiconductor physics and solar cells operation, describe the technologies and manufacturing processes of different types of Solar cells and electrical characteristics, understand the fundamentals and the importance of Photovoltaic system, educate the Analyze/Design Off-grid and On-grid PV systems and the pay-back period calculations using many software tools, knowledge on laws, codes and standards associated with PV energy systems, Case Study project
7	Pharmaceutical Ethics & Legislation	This course introduces the students to existing laws and regulations governing the practice of Pharmacy in Jordan and gives the students introductory about the Pharmacy Laws abroad (e.g. USA) as well as New Drug Approval process. In addition the course discusses code of ethics in pharmacy and helps the student to distinguish ethical from other kinds of issues in pharmacy and identifies options open to a pharmacist faced with an ethical issue.





### Links for some of the Courses Description

- ✓ [https://husystems.hu.edu.io/reports/rwservlet?stdkey&report=dept\\_crs\\_desc\\_e\\_01.rdf&envid=en&p\\_dept=220300&prgm=5001](https://husystems.hu.edu.io/reports/rwservlet?stdkey&report=dept_crs_desc_e_01.rdf&envid=en&p_dept=220300&prgm=5001)
- ✓ [https://husystems.hu.edu.io/reports/rwservlet?stdkey&report=dept\\_crs\\_desc\\_e\\_01.rdf&envid=en&p\\_dept=40900&prgm=5003](https://husystems.hu.edu.io/reports/rwservlet?stdkey&report=dept_crs_desc_e_01.rdf&envid=en&p_dept=40900&prgm=5003)

## Empowering Students for a Sustainable Future: The Role of the Renewable Energy Center:

The Renewable Energy Center at Hashemite University takes great pride in its commitment to fostering a culture of sustainability among students. Our center plays a pivotal role in supporting and empowering students through various initiatives aimed at providing hands-on experience, practical training, and support for projects related to sustainability.

### Practical Training and Skill Development:

The Renewable Energy Center serves as a dynamic platform for students to gain practical training in renewable energy technologies and sustainable practices. Through workshops, seminars, and hands-on sessions, students acquire valuable skills that align with real-world applications. By immersing themselves in renewable energy projects, students learn to harness the potential of green technologies, thus bolstering their competence and expertise in the field

- ✓ During 2022, more than 70 undergraduate and graduate students received their technical field training and research during the commencement and operation of the project.
- ✓ Free renewable energy training course over three weeks for students and local community (more than 30 students) during May 2023.





### Complementing Academic Courses:

In collaboration with the university's faculties and colleges, the Renewable Energy Center actively supports certain courses with practical components related to sustainability. By providing students with access to cutting-edge laboratory facilities and renewable energy equipment, we enrich their learning experiences. Students gain a deeper understanding of course concepts by directly engaging with renewable energy systems, enabling them to make meaningful connections between theory and practice.

- ✓ In 2022/2023, the renewable energy center and PV project has received more than 300 visitors from outside the university in 40 visits. The center also holds a five training visits for the Hashemite University student to support certain courses with practical components related to sustainability.



### Supporting Graduation Projects:

As the culmination of their academic journey, students undertake graduation projects that address real-world challenges and contribute to sustainable solutions. The Renewable Energy Center serves as a valuable resource, providing mentorship, technical guidance, and research support to students undertaking projects related to sustainability. Our center believes in nurturing innovation and creativity, encouraging students to explore novel ideas that can have a positive impact on environmental conservation and renewable energy utilization.



### Internship Opportunities:

The Renewable Energy Center collaborates with industries and organizations that share our vision of sustainable development. We facilitate internship opportunities for students, enabling them to gain invaluable industry exposure and experience firsthand the application of renewable energy concepts in real-world settings. These internships not only foster personal and professional growth but also reinforce the importance of sustainability in today's global landscape.

