



**Jordan University of Science and Technology**  
**Faculty of Engineering**  
**Civil Engineering Department**

CE785 Special Topics In Water And Enviro. Eng. - JNQF Level: 9

Second Semester 2023-2024

**Course Catalog**

3 Credit Hours. This course consists of four main parts. The first part introduces climate change by answering the question ?How and why the climate is changing?. The second part focuses on the impact of climate change on the human health and on the related sectors that are important for the human life including water and agriculture. Climate change hazards, such as drought, floods, heat waves and their impacts on health will be introduced. In the third part, the focus will be on responses and adaptation to climate change. Several examples on climate resilient adaptation and mitigation measures will be addressed for water, health and agriculture sectors. In the last part, climate change modelling, climate change scenarios development and vulnerability assessment will be introduced

**Teaching Method:** Blended

**Text Book**

<b>Title</b>	The Climate Crisis, An Introductory Guide to Climate Change, Cambridge University Press
<b>Author(s)</b>	David Archer & Stefan Rahmstorf
<b>Edition</b>	1st Edition
<b>Short Name</b>	DS
<b>Other Information</b>	

**Instructor**

<b>Name</b>	<b>Prof. Fayeza Abdulla</b>
<b>Office Location</b>	C2 L1
<b>Office Hours</b>	Sun : 09:00 - 11:00 Mon : 13:00 - 15:00 Tue : 10:00 - 12:00 Wed : 10:00 - 12:00 Thu : 12:00 - 14:00
<b>Email</b>	fabdulla@just.edu.jo

**Class Schedule & Room**

Section 2:

Lecture Time: Thu : 09:30 - 11:00

Room: C5025

**Tentative List of Topics Covered**

<b>Weeks</b>	<b>Topic</b>	<b>References</b>
Week 1	Introduction to Climate Science and Climate Change	
Week 2	Global and regional climate modeling	
Week 3	Downscaling of climate change scenarios	
Week 4	Introduction to CC science, modeling and scenarios & Uncertainties in Climate Change	
Week 5	Why is climate change a health risk today?	
Week 6	Causes of Climate Change Greenhouse Gasses (GHG) and Short-Lived Climate Pollutants (SLCP): concepts and impact on health	
Week 7	Climate Intensification: Floods, Droughts and Cyclones, Water resources	
Week 8	Climate Change and Human Health Heat and Air Quality and impact on health	
Week 9	Adaptation and Mitigation Measures in the Health Sector	
Week 10	Extreme climate events: the choking face of climate change	
Week 11	Climate change solutions: Everyone has a role	
Week 12	Climate Change and Water Resources: Responses and Adaptation	
Weeks 12, 13	Vulnerability assessment frameworks	
Weeks 14, 15, 16	case studies	

<b>Mapping of Course Outcomes to Program Outcomes and NQF Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
introduce and enable the students to become familiar with the Science of climate change, variability, scenarios and modelling [1PI-7a] [1L9K1]	25%	First Exam, Final Exam
identify the impacts of climate change on water and agriculture and health sectors [1PI-3a] [1L9S3]	25%	Second Exam, Final Exam
identify the adaptation measures for relevant sectors [1PI-7a] [1L9K2]	15%	Final Exam
Carry out the vulnerability assessment for water resources for a river basin [1PI-1a] [1L9K3]	35%	Project, Final Exam

Relationship to Program Student Outcomes (Out of 100%)											
PI-1a	PI-2a	PI-2b	PI-2c	PI-2d	PI-3a	PI-4a	PI-4b	PI-5a	PI-6a	PI-6b	PI-7a
35					25						40

Relationship to NQF Outcomes (Out of 100%)			
L9K1	L9K2	L9K3	L9S3
25	15	35	25

Evaluation	
Assessment Tool	Weight
First Exam	12.5%
Second Exam	12.5%
Project	25%
Final Exam	50%

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