Faculty: Engineering Technology	
Department: Energy	**Program: Bachelor Degree**
Academic year:2024-2025	**Semester: 1^{st}(Fall)**

Course Plan

First: Course Information

Course No. 0906511	***Course Title:* Energy And Environment**	***Credit Hours:3***
Prerequisite: 0906353	***Section No.: 1***	***Lecture Time: 12-1,Sun,Tue,and Thu***
Type Of Course:	☐ ***Obligatory Faculty Requirement Elective*** ☐ ***University Requirement*** ☐ ***ObligatoryUniversity Requirement*** ☐ ***FacultyRequirement*** ☐ ***Course Elective SpecialtyRequirementObligatorySpecialization requirement***	
Type of Learning:	☒ ***Face-to-Face Learning*** ☐ ***BlendedLearning(2 Face-to-Face + 1Asynchronous)*** ☐ ***Online Learning (2 Synchronous+1 Asynchronous)***	

Second: Instructor's Information

***Name:* Dr. Hani Attar**		***Academic Rank:* Assistant Professor**		
Office Number:222 l		***Ext. Number:2029***	***E-mail:* Hattar@zu.edu.jo**	
Office Hours:	***Sunday***	***Monday***	***Tuesday***	***Wednesday***	***Thursday***
	9- 10	***12-1***	***9 – 10***	***12-1***	***9 – 10***

Third: Course Description

Energy systems and environment; conventional and renewable energy sources. The impact of RE in reducing CO_2 emissions. Consequence of pollution growth; air, water, soil, thermal, noise pollution-cause and effect; causes of global, regional and local climate change; pollution control methods; environmental laws on pollution control. Sustainability: global warming; green house, gas emissions, impacts, mitigation; externalities.The effect of future energy systems

Fourth: Learning Source

Main Reference:	**Energy and the environment : scientific and technological principles, Roger Hinrichs , Merlin Kelinback.**	
Author: **Roger Hinrichs , Merlin Kelinback.**	***Issue No.:***	***Publication Year:***
Additional Sources&Websites:	• •	
Teaching Type:	☒ ***Classroom*** ☐ ***Laboratory*** ☐ ***Workshop*** ☐ ***MS Teams*** ☐ ***Moodle***	

Fifth: Learning Outcomes

Course Code	***Course IntendedLearning Outcomes (CILOs)***	***Connection To Program ILOs Code***
Knowledge		
**K1	**Identify** the sources and types of energy	*PK1
K2	**Identify** principle of energy conservation.	PK2
Skills		
***S1	**Analyze** the fossil fuels (oil, coal and gas) formation processes and its impact on the environment.	PS1
S2	**Analyze** the global warming and climate change problem	PS2
Competencies		
****C1	**Identify** the future of the energy systems and how to rely on renewable energy sources to reduce the environmental problems.	PC1

*** P: Program, **K: knowledge, ***S: skills, ****C: competencies.**

Sixth: Course Structure

Lecture Date	Intended Teaching Outcomes(ILOs)	Topics	Teaching Procedures*	TeachingMethods***	References***
13/10/2024	A1	Introduction to Energy Fundamentals, Energy use in an industrial society	General discussions	Discussion and problem Solving	Energy Engineering
15/10/2024	A2	Introduction to Energy Fundamentals, Energy use in an industrial society	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
17/10/2024	B1	Introduction to Energy Fundamentals, Energy use in an industrial society	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
20/10/2024	B2	Introduction to Energy Fundamentals, Energy use in an industrial society	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
22/10/2024	A1	Introduction to Energy Fundamentals, Energy use in an industrial society	At least one exam will be held suddenly during the semester	Discussion and problem Solving	Energy Engineering
24/10/2024	A2	Introduction to Energy Fundamentals, Energy use in an industrial society	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
27/10/2024	B1	Introduction to Energy Fundamentals, Energy use in an industrial society	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
29/10/2024	B2	Introduction to Energy Fundamentals, Energy use in an industrial society	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
31/10/2024	A1	Introduction to Energy Fundamentals, Energy use in an industrial society	General discussions	Discussion and problem Solving	Energy Engineering
3/11/2024	A1	Energy basics and energy forms and units	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering

5/11/2024	A2	Energy basics and energy forms and units	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
7/11/2024	B1	Energy basics and energy forms and units	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
10/11/2024	B2	Energy Conservation and Higher Efficiency	At least one exam will be held suddenly during the semester	Discussion and problem Solving	Energy Engineering
12/11/2024	A1	Energy Conservation and Higher Efficiency	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
14/11/2024	A2	Energy Conservation and Higher Efficiency	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
17/11/2024	B1	Energy Conservation and Higher Efficiency	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
19/12/2024	B2	Energy Conservation and Higher Efficiency	General discussions	Discussion and problem Solving	Energy Engineering
21/11/2024	A1	Energy Conservation and Higher Efficiency	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
24/11/2024	A2	Energy Conservation and Higher Efficiency	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
26/11/2024	B1	Energy Conservation and Higher Efficiency	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
28/11/2024	B2	Energy Conservation and Higher Efficiency	At least one exam will be held suddenly during the semester	Discussion and problem Solving	Energy Engineering
1/12/2024	A1	Introduction to Energy & Environment	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
3/12/2024	A2	Introduction to Energy & Environment	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
5/12/2024	B1	Introduction to Energy & Environment	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
8/12/2024	B2	Introduction to Renewable and Non-renewable Energy Sources	General discussions	Discussion and problem Solving	Energy Engineering

10/12/2024	A1	Introduction to Renewable and Non-renewable Energy Sources	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
12/12/2024	A2	Introduction to Renewable and Non-renewable Energy Sources	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
15/12/2024	B1	Introduction to Renewable and Non-renewable Energy Sources	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
17/12/2024	B2	Introduction to Renewable and Non-renewable Energy Sources	At least one exam will be held suddenly during the semester	Discussion and problem Solving	Energy Engineering
19/12/2024	A1	Introduction to Renewable and Non-renewable Energy Sources	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
22/12/2024	A2	Air Pollution	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
24/12/2024	B1	Air Pollution	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
26/12/2024	B2	Air Pollution	General discussions	Discussion and problem Solving	Energy Engineering
29/12/2024	A1	Global Effects	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
31/12/2024	A2	Global Effects	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
2/1/2025	B1	Global Effects	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
7/1/2025	B2	Climate change problem	At least one exam will be held suddenly during the semester	Discussion and problem Solving	Energy Engineering
9/1/2025	A1	Climate change problem	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
12/12/2025	A2	Climate change problem	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
14/12/2025	B1	Climate change problem	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering
16/12/2025	B2	Climate change problem	Review the previous lecture, then explain the current lecture	Discussion and problem Solving	Energy Engineering

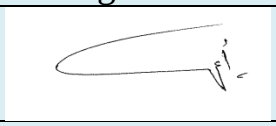
* Learning procedures: (Face-to-Face, synchronous, asynchronous). * * Teaching methods: (Lecture, video…..). ** * Reference: (Pages of the book, recorded lecture, video….)

Seventh: Assessment methods

Methods	Grade	Date	Platform	CLO'S
First Exam	20	Fixed by the Department	Classroom	K،K
Second Exam	20	Fixed by the Department	Classroom	S،S
Assign, Quizzes &Participation	10	During Semester	Classroom+Moodle	All CLO'S
Final Exam	50	Fixed by the Department	Classroom	All CLO'S

Eighth: Course Policies

- All course policies are applied on all teaching patterns (online, blended, and face-to-face Learning) as follows:
  a. Punctuality.
  b. Participation and interaction.
  c. Attendance and exams.
- Academic integrity: (cheating and plagiarism are prohibited).

Approved by:	Name	Date	Signature
Head of Department	Dr. Ayman Amer		
Faculty Dean	Prof .Taiseer Alghanim