

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Specification Form for the Academic

University: Northern Technical University
College: Technical Engineering College of Kirkuk
Department: Mechanical Power Engineering Techniques
Date of Form Completion: 01/09/2023

Dean's Name

Date: / /

Signature

Dean's Assistant for
Scientific Affairs

Date: / /

Signature

Dr. Adnan Mohammed
Hussein

Head of Department

Date: 1 / 9 / 2023

Signature

Quality Assurance and University Performance Manager

Date: / /

Signature



TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This programme specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided . it is supported by a specification for each course that contributes to the programme

1-Teaching institution	Northern Technical University
2- University Department /centre	Technical College Eng. of Kirkuk .Mechanics Power Tech. Eng. Dep
3-programme title	Specialized physics
4-title of final Award	Bachelor's degree in power engineering
5-Modes of Attendance offered	Class lectures
6-Accreditation	The student must be qualified to work in the fields of refractories and be graduated from the department after completing four years of study in which he is eligible to obtain a Bachelor's degree in Power Mechanical Technology .Engineering
7-Other external influences	The student will be able to maintain and repair cooling devices
8- Data of production /revision of this specification	3/24/2024
9-aims of the programme .	
1. To acquire a systematic body of physical knowledge and develop an understanding of the concepts, principles and .applications of physics. In understanding the concepts & principles, then one can further education in physics	
2.To develop a scientific attitude by looking at issues systematically and applying systematic methods of (analysis (clear steps or procedures	
3. To develop a range of skills important for scientific investigation	
4.To stimulate curiosity, interest and enjoyment of physics through methods of inquiry and care for the environment. This will help in motivating the students because it is only a motivated person that spends more time on a subject and achieves more as a result. In science the best method of inquiry is the practical approach	
5.To develop an understanding on the consequences of physics on man and his environment such as communication, transport	

10 . Learning Outcomes ,Teaching ,Learning and Assessment Method .

Knowledge of Physics: Students will develop a solid understanding of physics, including its applications and roles

Applying physics to projects: Students will be able to apply physics .2 knowledge to real-world projects, and demonstrate their ability to design and implement specific requirements

3. Analyzing and improving physics: Students should be able to analyze physics for performance, and apply optimization techniques to improve these metrics

A-Knowledge and Understanding

. Explanation on the board, showing educational videos, comparing examples with what suits our daily lives

B.Subject-specific skills

able to interpret scientific facts

C2-Solving physics problems related to movement

C3- Urging students to work together by solving class assignments in groups

C4- The student should be able to understand physical terms.

Teaching and Learning Methods

able to interpret scientific facts

C2-Solving physics problems related to movement

C3- Urging students to work together by solving class assignments in groups

.C4- The student should be able to understand physical terms

C. Thinking Skills

C1. able to interpret scientific facts

C2-Solving physics problems related to movement

C3- Urging students to work together by solving class assignments in groups

.C4- The student should be able to understand physical terms

Teaching and Learning Methods:

Explanation on the board, showing educational videos, comparing examples with what is consistent with our daily lives

Assessment Methods:

.Daily exams, monthly exams, homework, and in-class assignments

D. General and Transferable Skills (other skills relevant to employability and personal development)

Practical training: Practical exercises and assignments are an important .1 part of learning yoga. Opportunities should be provided to practice solving .questions. Act wisely and reinforce concepts

Tutorials: Small group science lessons can provide additional support .2 and guidance for hobbyists. We can offer these sessions on problem solving and debugging techniques. They provide an interactive audience to ask questions to personal assistance. . Peer collaboration: Encouraging peer collaboration can be beneficial in physics. Students can work together on projects, share knowledge and exchange ideas. Collaborative activities promote teamwork, communication, and deeper understanding .of physics concepts

Assessments: Regular assessments, such as quizzes, quizzes, or .4 programming

11. Course Structure

week	Hours	ILOS	Unit/modul or topic title	Teaching method	Assessment Method
1	3	To know the meaning of forces	Power	To know the meaning of forces	Explanation on the board
2	3	To know the effect of forces	the movement	To know the effect of forces	Examples with YouTube
3	3	To know the difference between distance and displacement	displacement	To know the difference between distance and displacement	Explanation on the board
4	3	To know the difference between distance and displacement	distance	To know the difference between distance and displacement	Explanation on the board
5	3	What are the laws of average speed?	Medium speed	What are the laws of average speed?	Examples with YouTube
6	3	What are the laws of instantaneous speed?	Instantaneous speed	What are the laws of instantaneous speed?	Explanation on the board
7	3	What are the laws of acceleration and its symbol?	Acceleration	What are the laws of acceleration and its symbol?	Explanation on the board
8	3	Memorize the three laws of motion	Laws of motion on a straight line with constant acceleration	Memorize the three laws of motion	Examples with YouTube
9	3	Explain exceptions to Newton's law	The first rule to which Newton's law does not apply	Explain exceptions to Newton's law	Explanation on the board
10	3	Fast bodies to which Newton's law does not apply	The second rule to which Newton's law does not apply	Fast bodies to which Newton's law does not apply	Explanation on the board
11	3	It applies to static objects	Newton's first law of motion	It applies to static objects	Examples with YouTube
12	3	Applies to moving objects	Newton's second law of motion	Applies to moving objects	Explanation on the board
13	3	Every action has an equal and opposite reaction	Newton's third law of motion	Every action has an equal and opposite reaction	Explanation on the board
14	3	Weight law	the weight	Weight law	Examples with YouTube
15	3	The effect of friction on force	Friction	The effect of friction on force	Explanation on the board

12. Infrastructure

Required reading: . CORE TEXTS . COURSE MATERIALS . OTHER	
Special requirements (include for example workshops ,periodicals,IT software ,Websites)	periodicals

Community -based facilities (include for example ,guest Lectures,intership,field,studies)	
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13. Admissions

Pre-requisites

Maximum number of students

Maximum number of students

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

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1. Teaching Institution	Technical College of Engineering / Kirkuk
2. University Department/Centre	Department of Power Mechanics Technology Engineering
3. Programme Title	control circuits MPE 0406
4. Title of Final Award	Bachelor of Power Mechanical Engineering Technology
5. Modes of Attendance offered	
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	25/03/2024
9. Aims of the Programme :-	The program aims to graduate students with a specialty in power mechanical technology engineering who will be qualified to work in the fields of mechanics and device control systems. He will be graduated by the department after completing four years of study in which he will be qualified to obtain a bachelor's degree in power mechanical technology

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

- . A1. It aims to know mechanical control systems
- . A2. It aims to know the operation of mechanical machines and work with them
- . A3. It aims to know how to use a computer and how to program
- . A4. It aims to know how to organize and make machine outputs stable
- A5. It aims to learn mathematics and engineering analyses
- A6.

B. Subject-specific skills

- . B1. It aims to learn the skill of computer operation and organized work
- . B2. It aims to learn the skill of simulation
- B3. It aims to learn the skill of designing and constructing laboratories

Teaching and Learning Methods

Delivering theoretical and practical lectures, running laboratories, workshops, and summer training during the summer vacation period

Assessment methods

Daily tests, quarterly exams (theoretical + practical), discussing periodic reports, discussing research projects

C. Thinking Skills

- C1. Preparing educational cadres that can be relied upon in state institutions within the specialty
- C2. Developing solutions to the problems encountered by institutions and mechanical systems
- C3. Work to prepare the requirements of the labor market and raise economic capacity

Teaching and Learning Methods

.Development courses, periodic seminars, seminars

Assessment methods

.Periodic tests
.Feed B evaluation methods -

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D1. communication and conversation skills such as English and presentation skills
- . D2. Teamwork skills
- . D3. Leadership skills and taking responsibility
- D4. Self-education and self-reliance skills

Teaching and Learning Methods

Assessment Methods

.Lectures, laboratories and workshops, summer training, graduation projects

11. Programme Structure

Level/Year	Course or Module Code	Course or Module Title	Credit Rating	12. Awards and Credits
				Bachelor Degree Requires (x) credits

13. Personal Development Planning

.Methodological books

(K. Ogata, Modern Control Engineering, 3rd -

K. Warwick, An Introduction to Control System -

(Helping resources (secondary books -

The Internet, self-education websites, reputable international university websites, -
and Iraqi university websites

14. Admission criteria .

Classrooms for theoretical lectures equipped with modern presentation supplies
Laboratory hall equipped with the necessary laboratory equipment to conduct -
practical experiments on different types of systems

Scientific section
the average -

15. Key sources of information about the programme

Updating the course vocabulary continuously and periodically as a result of - 1
the rapid development in the field of renewable energy 2 - Writing an electronic
training package for the Control Circuits course based on the course vocabulary

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1-Teaching institution	Northern Technical University - Engineering Technical College / Kirkuk
2- University Department /centre	Mechanics Power Tech. Eng. Dep.
3-programme title	Power Plant Systems
4-title of final Award	Bachelor of Engineering Mechanics Power Technologies
5-Modes of Attendance offered	Annual (Weekly attendance)
6-Accreditation	Accreditation Board for Engineering and Technology (ABET)
7-Other external influences	1. Training courses for students to develop students' professional skills 2. Field visits
8- Data of production /revision of this specification	1 / 9 / 2023
9-Amis of the programme	
	1. To develop problem solving skills and understanding of power plant systems the application of techniques.
	2. To understand feed water, reheated and regenerator.
	3. This course deals with the basic concept of power plant.
	4. This is the basic subject for all power plant systems.
	5. To understand steam turbine and gas turbine problems.

10 . Learning Outcomes ,Teaching ,Learning and Assessment Methode

A-Knowledge and Understanding

A1. The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills.

A2. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

B. Subject-specific skills

B1. To develop problem solving skills and understanding of power plant systems the application of techniques.

B2. To understand feed water, reheated and regenerator.

B3. This course deals with the basic concept of power plant.

Teaching and Learning Methods

1- Theoretical and practical lectures.

2- Pre and post questions.

3- Weekly tests.

4- Semester exams.

C. Thinking Skills

C1. The student listens attentively to the teacher's explanation.

C2. To take care of the student calm and class order.

C3. To familiarize the student with the importance of power plant system.

C4. Describe the importance of installing mechanical parts

Teaching and Learning Methods

Lectures

Home works

Slides and examples

Assessment Methods

Exam and weekly quiz

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Developing mental skills that enable the graduate to benefit from the information he learns and the skills he acquires, and employing them in serving his requirements as an individual and in serving the goals of society in terms of social and economic development.

D2. Develop sound thinking methods and release potential energy

11. Course Structure

Week	Hours	ILOS	Unit/modul or topic title	Teaching method	Assessment Method
1	4	The student understands the lesson	Introduction	Theoretical and practical	Weekly exams
2	4	The student understands the lesson	steam cycles	Theoretical and practical	Weekly exams
3	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
4	4	The student understands the lesson	Steam power plant description	Theoretical and practical	Weekly exams
5	4	The student understands the lesson	Increasing efficiency of power plant	Theoretical and practical	Weekly exams
6	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
7	4	The student understands the lesson	Reheat cycles	Theoretical and practical	Weekly exams
8	4	The student understands the lesson	Regenerative cycles	Theoretical and practical	Weekly exams
9	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
10	4	The student understands the lesson	Feed water heater	Theoretical and practical	Weekly exams
11	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
12	4	The student understands the lesson	Combined power plant	Theoretical and practical	Weekly exams

13	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
14	4	The student understands the lesson	Steam turbine	Theoretical and practical	Weekly exams
15	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
16	4	The student understands the lesson	Introduction	Theoretical and practical	Weekly exams
17	4	The student understands the lesson	gas cycles	Theoretical and practical	Weekly exams
18	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
19	4	The student understands the lesson	gas power plant description	Theoretical and practical	Weekly exams
20	4	The student understands the lesson	Increasing efficiency of power plant	Theoretical and practical	Weekly exams
21	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
22	4	The student understands the lesson	Combined cycles	Theoretical and practical	Weekly exams
23	4	The student understands the lesson	Regenerative cycles	Theoretical and practical	Weekly exams
24	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
25	4	The student understands the lesson	Feed water heater	Theoretical and practical	Weekly exams
26	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams

27	4	The student understands the lesson	Combined power plant	Theoretical and practical	Weekly exams
28	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams
29	4	The student understands the lesson	Boiler	Theoretical and practical	Weekly exams
30	4	The student understands the lesson	Tutorial and solve problems	Theoretical and practical	Weekly exams

12. Infrastructure

Required reading: . CORE TEXTS . COURSE MATERIALS . OTHER	Seminar session
Special requirements (include for example workshops ,periodicals,IT software ,Websites)	<u>Standard handbook of powerplant engineering</u>
Community –based facilities (include for example ,guest Lectures,intership,field,studies)	https://archive.org/details/standardhandbook0000unse_t0h8/page/n3/mode/2up

13. Admissions

Pre-requisites

Maximum number of students

Maximum number of students