Academic Program Description Form

University Name: Diyala

Faculty/Institute: Engineering

Scientific Department: Materials engineering

Academic or Professional Program Name: Bachelor of Materials engineering

Final Certificate Name: Bachelor of Materials engineering

Academic System: course

Description Preparation Date: 24-6-2024

File Completion Date: 24-6-2024

Signature:

Head of Department Name:

Suha K. Shihab

Date: 25/6/2024

Signature:

Scientific Associate Name:

Jabbar Gaftmah

Date: 25/6/2024

The file is checked by: Salah N. Farhan

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 25/6/2024

Signature:

Approval of the Dean

Prof. Dr. Anees A. Khadom

1. **Program Vision**
Program vision is written here as stated in the university's catalogue and website.

2. **Program Mission**
Program mission is written here as stated in the university's catalogue and website.

3. **Program Objectives**
General statements describing what the program or institution intends to achieve.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency?

5. **Other external influences**
Is there a sponsor for the program?

6. **Program Structure**				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements				
College Requirements				

Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Implemented at all stages of the program in general.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
4th Year-1st Semester	Materials Selection for Design II	MAE401	Core	√	√	√	√	√	√	√	√	√	√	√	√

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Materials Selection for Design II
2. Course Code:
MAE401
3. Semester / Year:
1st Semester – 4th Year
4. Description Preparation Date:
8/8/2024
5. Available Attendance Forms:
Class Lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course administrator's name (mention all, if more than one name)
Name: ***Prof. Dr. Ahmed Falah Hasan***   ***Email:*** ahmed_hasan_eng@uodiyala.edu.iq
8. Course Objectives

Course Objectives	• In the course of the academic year, students will master the principles of material selection and design. • This will involve fully grasping the classifications of engineering materials, their manufacturing methods, the distinctions between them, and the advantages of each. • Furthermore, students will thoroughly understand the design considerations for diverse engineering applications utilized in the industrial sector. • Additionally, students will be required to proficiently perform design calculations for various engineering applications.
9. Teaching and Learning Strategies	

Strategy	• The lecturer prepares lectures on the subject in paper and electronic form and presents them to the students. • The lecturer delivers lectures in detail. • The lecturer requests periodic reports and homework assignments on the basic topics of the subject.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2	The student learns the basic brief about Materials Science and Engineering	An Introduction to Materials Science and Engineering	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams
Week 2 to Week 4	6	The student learns the Mechanical Properties considering a case study of light stiff beams and oars	Case Study Bases and Mechanical Properties Case Study The Lightest STIFF Beam • Case Study The Lightest STIFF Tie Rod Case Study Materials for Oars	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams
Week 5 to Week 6	4	The student learns how to calculate slender oars taking into account the density and coast	Case Study Materials for Slender Oars considering cost and weight	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams
Week 7	2	The student learns how to present their presentation of selected subject	Seminar	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams

Week 8	2	Identify the various types of manufacturing process	Manufacturing Processes selection	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams
Week 9 to Week 12	6	Understand the process for table legs material indices criteria	Table Legs: Material Indices	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams
Week 13 to Week 14	4	Familiarize yourself with the calculation Heat-Storing Wall: Material Indices	Heat-Storing Wall: Material Indices	Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams
Week 15	2	Cases study review		Lectures Notes PDF PowerPoint Video	Daily exams + monthly exams

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report … etc	
12. Learning and Teaching Resources	
Books Required reading:	No prescribed books are available for the subject.
Main references (sources)	The college library offers additional resources for the curriculum. Make sure to explore scientific websites to stay abreast of recent developments in the subject.
Recommended books and references (scientific journals, reports…).	William Bolton , Engineering Materials Technology, 2nd Edition , eBook SBN: 9781483141077, 1993. M.F. Ashby, Materials Selection in Mechanical Design, 4th Edition, Elsevier, San Francisco, 2011; ISBN 978-1-85617-663-7. Cambridge Engineering Selector (CES EduPack), Granta Design Limited, Cambridge, UK, 2010, www.grantadesign.com
Electronic references,	http://www-g.eng.cam.ac.uk/125/now/ces.html

Internet sites…	