هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	**Material Technology**
Course Code:	**213 AAD-3**
Program:	**Bachelor of Applied Arts**
Department:	**Applied Arts**
College: :	**Faculty of Design andArchitecture**
Institution:	**Jazan University**
Version:	**developed**
Last Revision Date:	**2023**

Table of Contents

A. General information about the course:

Course Identification					
1. Credit hours:3					
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered: **Level 5/ second year**					
4. Course general Description The course focuses on the definition of the raw materials used in the formation of the applied arts product and their names (scientific and commercial), which are used for each material, its characteristics and the modern technologies of the raw materials and their manufactured or natural components, the bases of their selection, methods of measurement, installation, connection and application on some Samples					
5. Pre-requirements for this course (if any):					
6. Co- requirements for this course (if any):					
7. Course Main Objective(s) This course aims to demonstrate the knowledge of the mechanical and physical properties of the materials forming the vocabulary of the applied arts product. And defines the basics of selection of different materials used in the field of applied arts. Analyze the nature of the operational potential of each yak including compatible with different stages and methods of production technology and functions of the product through Joining between using materials technology and its modeling tools. Chooses the technical specifications of different materials in terms of advantages, defects and use. Apply designs and primary models after acquiring the skills of conducting experiments and methods of assembling raw materials and creating simple models. Follow new materials through new technological means and discover different information using the network.					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	7,5	100%
2.	E-learning	0	0%
3.	Hybrid • Traditional classroom • E-learning	0	0%
4.	Distance learning	0	0%

2. Contact Hours **(based on the academic semester)**

No	Activity	Contact Hours
1.	Lectures	
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Demonstrate the knowledge of the mechanical and physical properties of the materials forming the vocabulary of the applied arts product.	K1	Demonstrate the knowledge of the mechanical and physical properties of the materials forming the vocabulary of the applied arts product.	K1
1.2	Defines the basics of selection of different materials used in the field of applied arts	K2	Defines the basics of selection of different materials used in the field of applied arts	K2
…				
2.0	Skills			
2.1	Connects the use of raw materials technology and their modeling tools	S1	Connects the use of raw materials technology and their modeling tools	S1
2.2	Chooses the technical specifications of different materials in terms of advantages, defects, and use.	S2	Chooses the technical specifications of different materials in terms of advantages, defects, and use.	S2
…				
3.0	Values, autonomy, and responsibility			
3.1	Acquires the skills of conducting experiments and methods of assembling raw materials and creating simple models	C1	Acquires the skills of conducting experiments and methods of assembling raw materials and creating simple models	C1
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	**Definition of materials forming applied arts product** **1- Technology of Textile Materials** Classification of different fiber types: **1. Morphological Classification:** **A-Natural fibers** - Vegetable fiber (cotton, linen, jute) - Animal fibers (wool - silk) Physical and mechanical properties of fibers **B-Industrial fibers** - Synthetic fibers (polyester, Poly Acrylic, Polyamide) - Regenerated fibers (Rayon, acetate) - Causes of industrial fiber production - Properties and uses	3
2.	2- **Fiber Classification on the basis of usage** (Textile fiber - bag fiber - fiber brushes .....) Basic performance characteristics of textile fabrics **Introduction to Engineering Industries** • Classification of engineering materials (Ceramic materials - metal materials - organic materials - overlays - Nano technology)	3
3	**2- Technology of Glass Material** • General introduction to glass material and its beginnings and uses • Multiple glass uses • Glass types in terms of chemical composition: (Glass Soda-Lead glass - quartz glass) • Types of glass in terms of physical treatment: (Plasticized glass - tempered glass)	3
4	Common methods of manufacturing glass -Additional compounds in glass manufacturing Glass industry and some types of glass in terms of use areas - Properties of glass Glass manufacturing technology - Chemical composition of glass - Glass coloring	3
5	**3- the ceramic materials technology** Introduction to ceramic industries Development of ceramic products **Classification of traditional ceramic products:** - Ceramic products -Chinese porcelain (Porcelain) -Stoneware products -Earth ware products	3

6	**Glass and Insulation Coatings** - Raw Coatings - Ferrite Coatings - Salt coatings Classification of advanced ceramic products: - Ceramic glass - Nuclear ceramics	3
7	- **4-metal ore technology** - Technological division of metals: - ferrous metals - Nonferrous metals - Division in terms of interaction with air oxygen -Division in terms of degree of density - Division in terms of the value of the metal	3
8	**Mineral properties and their uses in construction:** - Properties of iron and its applications in construction - (cast iron - wrought iron - raw cast iron) - Low Carbon Steel - Medium Carbon Steel - High Carbon Steel)	3
9	**Non-ferrous metals** - Properties of copper Properties of zinc and its applications Properties of aluminum and its applications in construction Aluminum and high technical architecture	3
10	Revision Exams (mid term1- midterm2	3
Total		

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.			
2.			
3.			
...			

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	ابراهيم شريف -الهندسية الصناعات
Supportive References	Callister, William) 2007). *Materials Science and Engineering* United States of America: John Wiley & Sons
Electronic Materials	YouTube and e-visits to museums and factories
Other Learning Materials	----------

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	For theoretical part Lecture rooms" Classrooms" are required, and they should be large enough to accommodate the number of registered students and provided with data show For Practical Part Classrooms containing 30 tables for Engineering Drawing &30 chairs:
Technology equipment (projector, smart board, software)	Projector Laptop
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Online system course evaluation (indirect)
Effectiveness of students assessment		
Quality of learning resources	Students	Objective test by Test specification table (indirect)
The extent to which CLOs have been achieved		
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	