



Course Specifications

Course Title:	Fiber Chemistry
Course Code:	224 AAD-2
Program:	Bachelor in Applied arts
Department:	Applied Arts
College:	Architecture and Design
Institution:	Jazan University

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A. Course Identification

1. Credit hours: 2hours (1 Lecture & 1 Laboratory)
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 4/2 rd Year
4. Pre-requisites for this course (if any): 101 chem.-4
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3 hours	100%
2	Blended	0	0 %
3	E-learning	0	0 %
4	Correspondence	0	0 %
5	Other	0	0 %

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	15
2	Laboratory/Studio	30 Hours
3	Tutorial	0
4	Others (specify) Assessment 1 Continuous assessment (1 hour only) 1 Presentation (0.5 hour only) 1 mid-term exam (1 hour only) 1 Final exam (and Practical – 2 hours)	4.5
	Total	49.5
Other Learning Hours*		
1	Study Theoretical study (1 hour for 1 CH) Practical (.5 hour for 1 CH)	30
2	Assignments 1 Continuous assessment for 1 CH 1 Mid- term exam for 1 CH 1 final exam(theoretical 1 hour - Practical 2 hours)	9
3	Library Preparation for 0.5 hour 1 CH	1.5
4	Projects 3 hours for 1 CH	12
5	Others(specify)	0
	Total	52.5
	All total	102

*The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course centered on introduction of Chemistry of Textile fibers and its processing. Topics to be covered include: Physical Chemistry of textile fibers- length, strength density, moisture etc; Chemistry of Natural and Synthetic fibers (Cotton, Wool, Silk, Polyamides, etc); Principles of fabric manufacture processes both natural and synthetics (starting from fiber to yarn and to fabric constructions) – cotton, polyester and nylon; Textile preparatory processes

2. Course Main Objective

The aim of this course introduces students to the principles of fiber chemistry and technology. An important part of this knowledge includes the principles of chemical structure of fibers. It contains selected some fibers and aims to help students to learn the molecular logic of plant fibers. Therefore, this course studies fibers production, the type of reagents, chemical penetration, the type of chemical reaction and the technology methods used to separate cellulose from plant fibers. At the same time, the success of these technologies depends on the properties of the fiber surface, auxiliary materials.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Understand the main abstract concepts related to the fibers structure...	K1
1.2	Classification and Lab recognize of fibers..	K1
1.3	Name different theories and philosophies	K3
2	Skills :	
2.1	Analyze through careful argument how fibers production fits within wider philosophical, historical, social and economic discourses.	S1
2.2	Research issues in fibers theory and to critically reflect upon them.	S1
2.3	Compare different fibers theories based on specified factors..	S2
3	Competence:	
3.1	Develop self-directed learning skills through reading and research.	C1
3.2	Participate effectively in group work and presentation towards a common goal	C 2
3.3	Engage in debates and class discussion to enrich knowledge.	C5

C. Course Content

No	List of Topics	Contact Hours
1	Definition of objectives, study plan and introduction for fibers chemistry.	3
2	Classification of fibers.	3

3	Studies effective and non effective groups.	3
4	Studies chemical structure of cellulosic fibers.	3
5	Studies the properties of cellulosic fibers.	3
6	1 st mid-term exam.	3
7	Studies chemical structure of protein fibers	3
8	Studies chemical structure of polyester fibers.	3
9	Studies the properties of protein fibers.	3
10	Studies the properties of polyester fibers	3
11	The ratio of cellulose in plants	3
12	. 2 st mid-term exam	3
13	Theories of fibers structure	3
14	. Comparison between fibers.	3
15	Revision.	3
Total		45

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Understand the main abstract concepts related to the fibers structure...	Lectures and discussions Brainstorming Cooperative learning Group discussion	MCQ direct method (Theoretical objective test) by Test specification table.
1.2	Classification and Lab recognize of fibers..		Indirect method
...	Name different theories and philosophies		course LO survey
2.0	Skills		
2.1	Analyze through careful argument how fibers production fits within wider philosophical, historical, social and economic discourses.	Lectures and experiments Brainstorming Cooperative learning Group discussion	direct method (Theoretical objective test) by Test specification table.
2.2	Research issues in fibers theory and to critically reflect upon them.		Indirect method
2.3	Compare different fibers theories based on specified factors..		Course LO survey.
3.0	Competence		
3.1	Develop self-directed learning skills through reading and research.	-Small group discussion -Interactivity Focus Cooperative learning Self-learning	direct method (Theoretical objective test) by Test specification table.
3.2	Participate effectively in group work and presentation towards a common goal		Indirect method
3.3	Engage in debates and class discussion to enrich knowledge.		course LO survey

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	Periodically	10%
2	Midterm test	Week 6 & 12	20%
4	Research & project	periodically	10%
5	Presentation	Week 11	10%
	Final exam	Week 16	50%
Total			100%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

- Individual consultations and academic advices will be allocated for a minimum of 6 hours per week.
- Tutorial for weak students will be allocated for a minimum of 4 hours per week.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	. K. Chawla, <i>Fibrous Materials</i> , Cambridge University Press, 1998.
Essential References Materials	Salvendy, G. (2006). Hand book of Human Factors and ergonomics, 3rd edition, Wiley.Lang, Pheasant, S. & Haslegrave, C. (2005) Body space: Anthropometry, Ergonomics and the Design of Work, 3rd edition, CRC P. Mishra, <i>A Textbook of Fibre Science and Technology</i> , New Age International, 2000.
Electronic Materials	, https://Fibre Science and Technology
Other Learning Materials	. M. G. Cowie, <i>Polymers: Chemistry and Physics of Modern Materials</i> , 2nd Edition, Blackie Academic and Professional,.

2. Facilities Required Ghosh, *Fibre Science and Technology*, Tata McGraw-Hill Education, 2004..

Item	Resources
Accommodation Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Class space furnished for more than 30 students.)	Chemistry Laboratory for group of 40 students.
Technology Resources Computing resources (AV, data show, Smart Board, software, etc.)	Data show , Smart Board,
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Printer

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods	
Effectiveness of teaching and assessment		Direct	Indirect
▪ Occasional student s feedback to head of the instructor.	Course instructor and students.	Occasional student Faculty meeting	Online system course evaluation
▪ Checking of test results	One of faculty member, then head of department	Taking samples of answering papers	-Course learning outcome survey
▪ Course evaluation.	Course instructor.	Test specification table.	-Course learning outcome survey
Extent of achievement of course learning outcomes			
▪ Course learning outcomes survey.	students	Paper questionnaire	-Objective test by test specification
▪ Revision of course contents and objectives every 5 years.	Program Leaders, Peer Reviewer.	-Paper questionnaire n	-Objective test by test specification
Quality of learning resources			
Assessment, Extent of achievement of course learning outcomes	Program Leaders, Peer Reviewer.	-Analysis of plan	-Objective test by test specification

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

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

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department council
Reference No.	
Date	