

Course Specification

— (Postgraduate Programs)

Course Title: Molecular Oncology
Course Code: BIO-6018
Program: Master of Science in Molecular Biology (Cell and Molecular Biology)
Department: Biology
College: Science
Institution: Imam Mohammad Ibn Saud Islamic University (IMSIU)
Version: 1
Last Revision Date: Pick Revision Date.

A. General information about the course:	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:	4
C. Course Content:	6
D. Students Assessment Activities:	7
E. Learning Resources and Facilities:	7
F. Assessment of Course Quality:	8
G. Specification Approval Data:	8

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2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	√	100%
2	E-learning	-	-
3	Hybrid - Traditional classroom - E-learning		
4	Distance learning		

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	-
3.	Field	-
4.	Tutorial	-
5.	Others (specify)	
	Total	30

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	Describe the relevant processes contributing to cancer development (tumorigenesis)	K1	-PowerPoint presentations -Informative videos and	-Quizzes -Assignments Presentations -Data search

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
			internet resources. -Class discussions	-Written exams
1.2	List the various factors responsible for the initiation of carcinogenesis and oncogenes	K2	-PowerPoint presentations -Informative videos and internet resources -Class discussions	-Quizzes -Assignments Presentations -Data search -Written exams
1.3	Explain the mechanisms of mutagenesis and the role of growth factors and signalling pathways in progression of cancer	K3	-PowerPoint presentations -Informative videos and internet resources -Class discussions	-Quizzes -Assignments Presentations -Data search -Written exams
2.0	Skills			
2.1	Relate between the relevant molecular mechanisms and the development of various types of	S1	-Demonstrations -Lecture discussions	-Presentations
2.2	Write a proposal to conduct experimental work in the area of molecular oncology using critical thinking and related techniques.	S2	-Demonstrations -Lecture discussions	-Presentations -Reports
2.3	Analyze and interpret the data relevant to the molecular development of cancer	S3	-Demonstrations -Lecture discussions	-Presentation -Reports



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Show independence and ability to cooperate in a teamwork	V1	-Demonstrations -Group discussions	- Reports
3.2	Communicate and discuss issues of molecular oncology and present research data professionally in a verbal manner or writing.	V2	-Group discussions	- Presentations -Reports
3.3	Adhere to ethical principles related to cancer research	V3	-Demonstrations	-Reports

C. Course Content:

No	List of Topics	Contact Hours
1.	General introduction to oncology and tumor biology	2
2.	Tumorigenesis and different types of tumours: -Tumor growth and angiogenesis, -Invasion and metastasis	4
3	Genetics of normal and malignant cells: -DNA repair mechanisms -Mechanisms of mutagenesis -Oncogenes -Tumor suppressor genes	2
4	Epigenetics in malignancy: -DNA methylation -Histone modifications -miRNAs	2
5	Growth factors and related signalling pathways: Role of growth factors and related signalling pathways in cancer progression	2
6	Regulated cell death and cancer	2



7	Cancer cell metabolism and interaction with normal cells	2
8	Tumor virology	2
9	Major principles of cancer treatment: -Radiotherapy -Hormonal treatment -Immunotherapy -Pharmacology -Antitumor agents.	4
Total		30

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Mid-term exam 1	5 th week	20%
2.	Mid-term exam 2	10 th week	20%
3.	Presentations, reports, attendance, data search, participation	Throughout the course duration	20%
...	Final exam	16 th week	40%

*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	-Henke Yarbro, C, Wujcik, B M & Holmes Gobel, B (2010). Cancer Nursing, Principles and Practice, 7th ed, Jones and Bartlett Sudbury, Massachusetts. -Abeoff, MD, Armitage, JO, Niederhuber, JE, Kastan, MB & Gillies Mckenna, W (2008). Abeloffs' Clinical Oncology, 4th ed, Churchill Livingstone
Supportive References	
Electronic Materials	
Other Learning Materials	

2. Educational and Research Facilities and Equipment Required:



Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom
Technology equipment (Projector, smart board, software)	Projector, smartboard
Other equipment (Depending on the nature of the specialty)	

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F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of students' assessment	Faculty	Direct
Quality of learning resources	Faculty	Direct
The extent to which CLOs have been achieved	Faculty	Direct
Other		

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

Assessment Methods (Direct, Indirect)

Indirect) عبد الحاشي، أبو الحزيب، عبد الله، رحمتي الناصر

G. Specification Approval Data:

COUNCIL /COMMITTEE	BIOLOGY DEPARTMENT COUNCIL
REFERENCE NO.	23
DATE	23/8/1445

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