Department's Manual

Program Title: Health Informatics

Name of Department: Public Health

College of Applied Medical Sciences

Majmaah University, Majmaah, Riyadh KSA

Department of Public Health

قسم الصحة العامة

Message from the Head of the Department

The Department of Public Health aims to achieve leadership in the fields of public health by qualifying national competencies to develop health care and support research in applied sciences. The educational process is based on providing theoretical knowledge and practical skills for students to qualify them to work as health specialists and observers in the field of public health and other health fields, and work on raising the quality of life. The rapid development in the science of information technology and medical information management, which is fully related to raising the quality of health care in the community, urged us to establish a health informatics program in order to achieve the department's goals and work to develop it in line with the goals of the Saudi Vision (2030). Health informatics is one of the important disciplines that is based on raising the efficiency and quality of health services through the use of the latest technologies in the field of technology. This field includes many sciences, including medical information management technology and health information analysis, from which a health informatics graduate is able to employ theoretical knowledge and is distinguished in the application of scientific and technical skills in computers and medical information management.

Head of The Department
Dr. Yahya Madkhali

About The Department

This Department is concerned with the promotion of Public health of the community through the development of research and analysis tools, in order to find out the causes of diseases and, consequently; improve public health in the community. It has for objective to ensure suitable environment for physical, mental and social human health. This would be achieved through the assessment and monitoring population groups at risk, identifying problems and health priorities, and thereafter; drawing the necessary policies and regulations to deal with these problems and health priorities in order to guarantee adequate health care, including preventive care for all segments of the society.

Relevance of the Program

The program mission clearly outlines the three functions through which we serve the community which are the education and production of future healthcare professionals, the direct and indirect healthcare services, and the research that will eventually improve health care.

The vision, mission, and values are all directly related to our community needs and the role that we serve in the community in terms of medical education, research and healthcare. The undergraduate program's mission clearly identifies the changing nature of healthcare needs of the Saudi community. These complies with Majmaah university Mission and goals. With a rapidly growing population and diversity of nationalities and ethnic backgrounds medical practice is challenging. With increasing awareness and modernization, issues of health prevention and education are becoming increasingly important.

Excellency in designing and executing the health informatics applications and electronic portfolio for developing the medical care and scientific research services.

Preparation graduates with competitive technical skills in the field of health informatics through distinct learning environment to serve the community and to support scientific research.

Through innovative education, world class research, and high quality healthcare we can achieve the vision of MU by contributing in building the knowledge based economy that our country

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greatly needs. In response to the program mission to prepare the students for the future challenges and needs for the Saudi community lot of stress is given on learning skills, professionalism, and health informatics.

Earning a degree in health informatics opens up a variety of career possibilities, many of which offer higher-than-average pay. In addition to learning about new technologies involved with healthcare information management, students also learn about healthcare business and administration, gaining a multifaceted understanding of the industry. Students graduate with a firm understanding of how to improve healthcare information systems. They also gain the background necessary to pursue a graduate degree in the field.

To meet the medical needs of the aging baby boomer population, the Bureau of Labor Statistics (BLS) projects that the healthcare industry will grow by 2.4 million jobs between 2016 and 2026. A portion of this demand requires workers who can organize, manage, and analyze the influx of healthcare data and information created as a result of this rapidly growing patient base. As more healthcare facilities adopt electronic health records (EHRs), they will need employees who understand how to manage this technology. The BLS projects medical records and health information technicians jobs to increase by 13% between 2016 and 2026, which is almost double the rate of growth for all occupations.

Program Mission:

Qualifying distinguished cadres in the fields of public health through advanced educational programs that contribute to scientific research and achieve the requirements of the labor market.

Program Vision:

Leadership in public health disciplines through qualifying national competencies for developing health services and supporting the applied research.

Program Objective:

1. Articulate the proper informatics management tools for health organization.
2. Identify information and data needs of research projects or program users and stakeholders with health organization.
3. Describe the information system development, procurement and implementation needs that meet the public health program needs within health organization.
4. Design and monitor the security management system of patient records.

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Organizational Structure of the Department
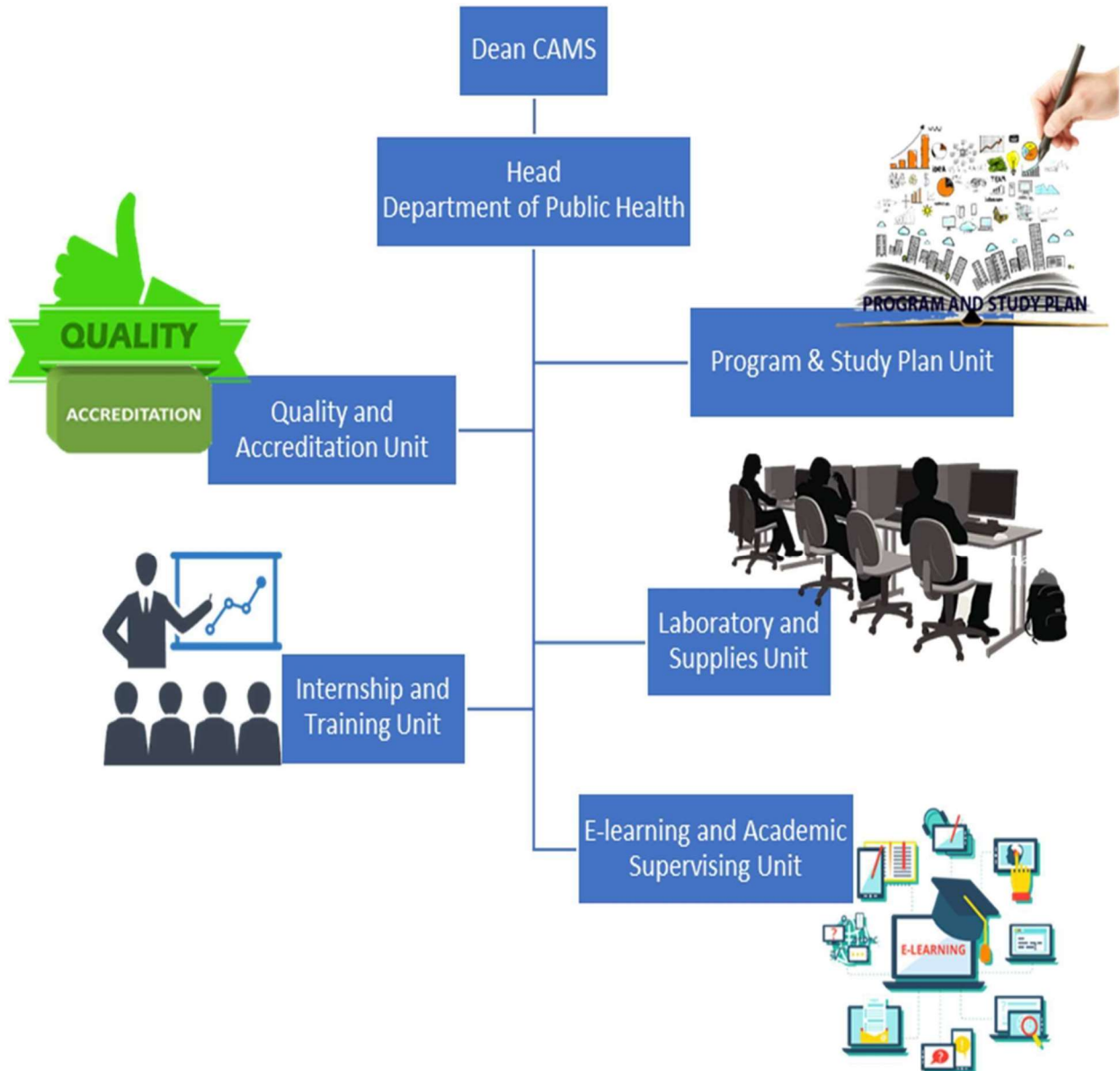
Curriculum

Study Plan (Curriculum)

Category	Preparatory Year	University	College	Department	Total
Mandatory (blue)	29	0	2	77	
Elective (orange)		12	4	4	
Mandatory (gray)		0	0	4	
(yellow)	29	12	6	85	133
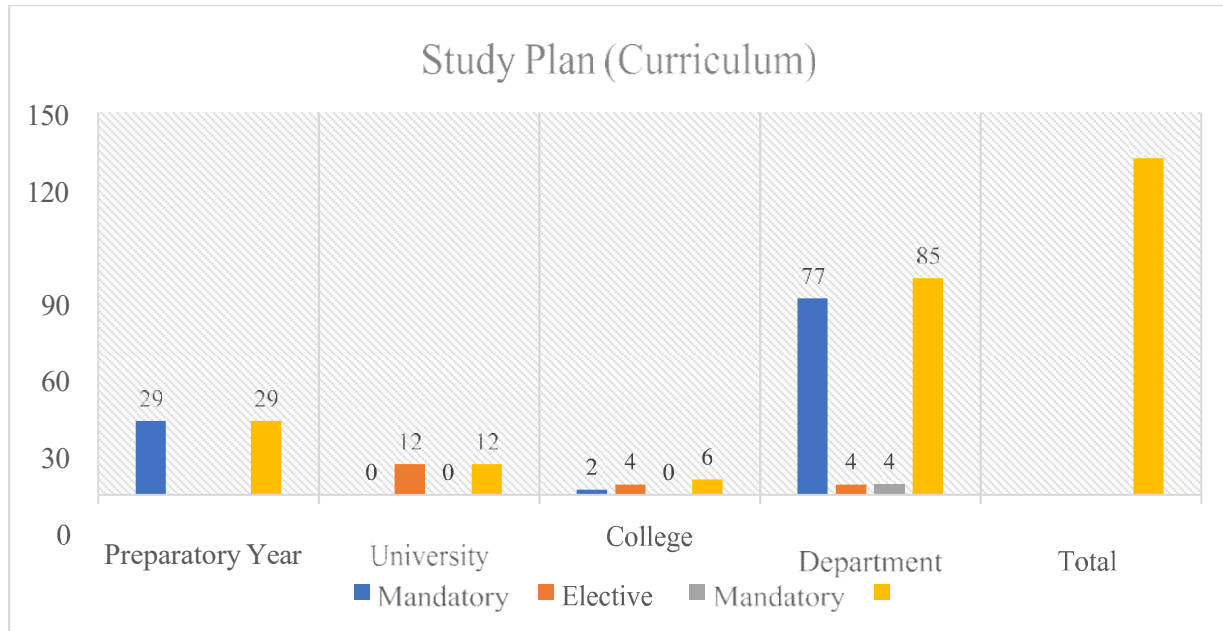
Study plan (Curriculum) of the academic program
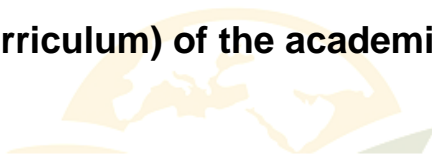
Study plan (Curriculum) of the academic program.

1- Compulsory and Elective Courses

Courses	Type	Total of Credit Hours	Percentage from the total credit Hours in the study plan (%)
University	Compulsory	0	0%
	Elective	12	9.1%
College	Compulsory	2	1.5%
	Elective	4	3%
Department	Compulsory	77	58.3%
	Elective	4	3%
	Hospital practice	4	3%
Preparatory year		29	22 %
Free Courses		0	0%
Total Sum and Percentages		132	100%

2- Preparatory Year* Courses (If any):

First Semester

Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite	Number & Code of Co-requisite
			T	P	Tr	CrH		
PENG	111	English (1) for Preparatory Year	2	6	0	8		
PMTH	112	Introduction to Mathematics (1)	2	0	0	2		
PCOM	113	Computer Skills	1	1	0	2		
PSSC	114	Learning and Communication Skills	1	1	0	2		
Total			6	8	0	14		

Second Semester

Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite	Number & Code of Co-requisite
			T	P	Tr	CrH		
PENG	121	English (2) for Preparatory Year	2	4	0	6		
PENG	122	English for Medical Specialties	1	1	0	2		
PCHM	123	Introduction to Chemistry	1	1	0	2		

PPHS	124	Physics for Health Purposes	1	1	0	2		
PBIO	126	Biology Science	2	1	0	3		
Total			7	8	0	15		

* accounted within the credit hours for the academic program

3- University Courses

Course Code	Course Number	Course Title	The number of Credit Hours
Student select 3 courses (6 Credit hours)			
SALM	101	Introduction to Islamic culture	2
SALM	102	Islam and community-building	2
SALM	103	Economic System in Islam	2
SALM	104	The foundations of the political system in Islam	2
Student select 1 course (2 Credit hours)			
ARAB	101	Language skills	2
ARAB	102	Arabic writing	2
Student select 2 courses (4 Credit hours)			
SOCI	101	Contemporary societal issues	2
ENG	101	English	2
ENT	101	Entrepreneurship	2
FCH	101	Family and Children	2
HAF	101	Basics Health and Fitness	2
LHR	101	Regimes and human rights	2
VOW	101	Volunteering	2
Total			12

4- College Compulsory Courses

Course Code	Course Number	Course Title	The number of Credit Hours
CAMS	233	Introduction to Biostatisticis	2
Total			2

5- College Elective Courses

Course Code	Course Number	Course Title	The number of Credit Hours
Student select 2 courses (4 Credit hours)			
CAMS	232	Medical Terminology	2
CAMS	231	Emergency care	2
CAMS	234	The quality of health care	2

6- Department Compulsory Courses

Course Code	Course Number	Course Title	The number of Credit Hours
HIF	231	Basic Physiology	2
HIF	232	Fundamentals to Anatomy	2
HIF	233	Calculus	3
HIF	234	Introduction to Public Health Informatics	2
HIF	235	Introduction to Hospital System and Organization	2
HIF	236	Principles of nutrition	2
HIF	241	Quality improvement in health care	2
HIF	242	Healthcare database I	2
HIF	243	Epidemiology	2
HIF	244	Electronic Health Records	2
HIF	245	Applied Mathmatics	3
HIF	246	Disease Mapping and Surveillance	2
HIF	351	Linear algerbra	3
HIF	352	Healthcare database II	2
HIF	353	Public Health Policy and Society	2
HIF	354	Information Technology Governance	2
HIF	355	Healthcare billing and coding	2
HIF	356	Introduction to computer programing in healthcare	3
HIF	361	Survey of Disease and Treatment	2
HIF	362	Computer Applications in Hospital	2
HIF	363	Discrete Mathematics	2
HIF	364	Healthcare System Analysis and Design	2
HIF	365	Data Transmission and Computer networks	3
HIF	366	Healthcare Informatics	3
HIF	471	Research Methodology	3
HIF	472	Minor Project	3
HIF	474	Information System Application Development	3

HIF	475	Data Mining for Healthcare Management	3
HIF	481	Health Information Service Administration	3
HIF	482	Health Economics and Comparative Health System	2
HIF	484	Major Project	3
HIF	485	Data Security and Human Ethics	3
Total			77

7- Department Elective Courses: The student must choose 4 credit Hours from the following:

Course Code	Course Number	Course Title	The number of Credit Hours
HIF Elective Course at Level 7 The student must choose <u>2 credit</u> Hours from the following			
HIF	476	Image Processing	2
HIF	477	Clinical decision support system	2
HIF	478	Selected topics in health informatics I	2
HIF Elective Course at Level 8 The student must choose <u>2 credit</u> Hours from the following			
HIF	486	Artificial Intelligence	2
HIF	487	Clinical Trials	2
HIF	488	Selected topics in health informatics II	2

8- Free Courses

Course Code	Course Number	Course Title	The number of Credit Hours
Not applicable			

9- Training Courses

Course Code	Course Number	Course Title	The number of Credit Hours
HIF	473	Hospital Practice I	2
HIF	483	Hospital Practice II	2
Total			4

10-Distribution of courses at levels: *(T-Theory, P-Practice, Tr-Training CrH- Credit Hour)*

Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			First Level					
			T	P	Tr	CrH		
PENG	111	English (1) for Preparatory Year	2	6	0	8	------	------
PMTH	112	Introduction to Mathematics (1)	2	0	0	2	------	------
PCOM	113	Computer Skills	1	1	0	2	------	------
PSSC	114	Learning and Communication Skills	1	1	0	2	------	------
Total			6	8	0	14		

Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			Second Level					
			T	P	Tr	CrH		
PENG	121	English (2) for Preparatory Year	2	4	0	6	------	------
PENG	122	English for Medical Specialties	1	1	0	2	------	------
PCHM	123	Introduction to Chemistry	1	1	0	2	------	------
PPHS	124	Physics for Health Purposes	1	1	0	2	------	------
PBIO	126	Biology Science	2	1	0	3	------	------
Total			7	8	0	15		

			Third Level						
Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			T	P	Tr	CrH		
HIF	231	Basic Physiology	1	1	0	2	PBIO 126	Biology Science
HIF	232	Fundamentals to Anatomy	1	1	0	2	PBIO 126	Biology Science
HIF	233	Calculus	3	0	0	3	PMTH 112	Introduction to Mathematics
HIF	234	Introduction to Public Health Informatics	2	0	0	2	------	------
HIF	235	Introduction to Hospital System and Organization	2	0	0	2	------	------
HIF	236	Principles of nutrition	2	0	0	2	------	------
CAMS	233	Biostatistics	2	0	0	2	------	------
MU1	MU***	MU Elective Course	2	0	0	2	------	------
Total			**15**	**2**	**0**	**17**		

			Fourth Level					
Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			T	P	Tr	CrH		
HIF	241	Quality improvement in health care	2	0	0	2	------	------
HIF	242	Healthcare database I	1	1	0	2	------	------
HIF	243	Epidemiology	2	0	0	2	HIF 234	Introduction to Public health
HIF	244	Electronic Health Records	1	1	0	2	HIF 235	Introduction to System and Hospital Organization
HIF	245	Applied Mathmatics	3	0	0	3	HIF 233	Calculus
HIF	246	Disease Mapping and Surveillance	1	1	0	2	------	------
MU2	MU***	MU Elective Course	2	0	0	2	------	------
CAMS	***	College Elective Course	2	0	0	2	------	------
Total			**14**	**3**	**0**	**17**		

Fifth Level								
Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			T	P	Tr	CrH		
HIF	351	Linear algerbra	3	0	0	3	HIF 245	Applied Mathmatics
HIF	352	Healthcare database II	1	1	0	2	HIF 242	Healthcare database I
HIF	353	Public Health Policy and Society	2	0	0	2	HIF 235	Introduction to Hospital System and Organization
HIF	354	Information Technology Governance	1	1	0	2	HIF 244	Electronic Health Records
HIF	355	Healthcare billing and coding	1	1	0	2	HIF 241	Quality improvement in health care
HIF	356	Introduction to computer programing in healthcare	2	1	0	3	------	------
MU3	***MU	MU Elective Course	2	0	0	2	------	------
CAMS	*****	College Elective Course	2	0	0	2	------	------
Total			14	4	0	18		

Sixth Level								
Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			T	P	Tr	CrH		
HIF	361	Survey of Disease and Treatment	2	0	0	2	HIF 246	Disease Mapping and Surveillance
HIF	362	Computer Applications in Hospital	1	1	0	2	HIF 356	Introduction to Computer Programing in Healthcare
HIF	363	Discrete Mathematics	2	0	0	2	HIF 351	Linear algerbra
HIF	364	Healthcare System Analysis and Design	1	1	0	2	HIF 355	Healthcare billing and coding
HIF	365	Data Transmission and Computer networks	2	1	0	3	HIF 356	Introduction to computer programing in healthcare
HIF	366	Healthcare Informatics	2	1	0	3	HIF 354	Information Technology Governance
MU4	MU***	MU Elective Course	2	0	0	2	------	------
MU5	MU***	MU Elective Course	2	0	0	2	------	------
Total			14	4	0	18		

			Seventh Level					
Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			T	P	Tr	CrH		
HIF	471	Research Methodology	1	2	0	3	------	------
HIF	472	Minor Project	0	3	0	3	------	------
HIF	473	Hospital Practice I	0	0	2	2	------	------
HIF	474	Information System Application Development	2	1	0	3	HIF 366	Healthcare Informatics
HIF	475	Data Mining for Healthcare Management	2	1	0	3	HIF 366	Healthcare Informatics
HIF	47*	HIF Elective Course	1	1	0	2	------	------
MU6	MU***	MU Elective Course	2	0	0	2	------	------
Total			**8**	**8**	**2**	**18**		

			Eighth Level					
Course Code	Course Number	Course Title	Distribution of Credit Hours				Number & Code of Prerequisite (Co-Requisite)	Name of Prerequisite (Co-Requisite)
			T	P	Tr	CrH		
HIF	481	Health Information Service Administration	2	1	0	3	HIF 475	Data Mining for Healthcare Management
HIF	482	Health Economics and Comparative Health System	2	0	0	2	HIF 474	Information System Application Development
HIF	483	Hospital Practice II	0	0	2	2	HIF 473	Hospital Practice I
HIF	484	Major Project	0	3	0	3	HIF 472	Minor Project
HIF	485	Data Security and Human Ethics	2	1	0	3	HIF 475	Data Mining for Healthcare Management
HIF	48*	HIF Elective Course	1	1	0	2	------	------
Total			**7**	**6**	**2**	**15**		