FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Pathology and Parasitology (PMI 201)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology department
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Pathology and Parasitology **Course Code: PMI 201**

Prerequisites: -

Students' Level/Semester: Second Level/ Third Semester

Credit hours: **3 (2+1)**

Actual teaching hours per week:

Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

This course provides the basic knowledge of structural and functional changes in disease, attempts to determine the cause of disease, underlying mechanisms & how patient signs and symptoms are related to underlying pathology. This knowledge should provide students background for clinical and pharmaceutical studies and allow them to understand all scientific disciplines and possession of skills and beliefs that are required for diagnosis, treatment & control of parasitic infections efficiently and correctly.

The course also helps them to know the taxonomy, habitat, morphology, life cycle, pathogenicity, clinical picture, diagnosis & treatment of Trematodes, Cestodes, Nematodes & Protozoa of medical importance and to identify Arthropods that are biological vectors of important human pathogens & their control.

2. Intended Learning Outcomes (ILOs) (Pathology)

By the end of this course, students should be able to:

a- Knowledge and Understanding:

a1. Identify the etiology of a disease.
a2. Identify the pathogenesis of a disease.
a3. List the structural and functional manifestations of disease.
a4. Describe the biological principles which govern changes in cells and tissues as a response to abnormal stimuli.
a5. Classify the basic classes of diseases which are: inflammatory, degenerative, developmental and neoplastic.

b- Intellectual Skills:

b1. Relate scientific data toward the practice of evidence -based medicine.

b2. Point out new patients' care practices based on the gained knowledge.

b3. Identify problems related to health of the patients.

b4. Relate the changes occurring in diseases with the etiological agent.

c- Professional and Practical Skills:

c1. Recognize disease at the gross, microscopic and ultra-structural level.

c2. Use resources to provide pathology services that are of optimal value.

c3. Demonstrate the general features of a pathological case

d- General and Transferable Skills:

d1. Develop interpersonal and communication skills that result in the effective exchange of information and expertise with other health care providers, patients, and patients' families.

d2. Argue about the active role in the education of the health-care community.

d3. Relate role of pathology to the system of health care.

2- Intended Learning Outcomes (ILOs) (Parasitology)

By the end of this course, students should be able to:

a- Knowledge and Understanding:

a1. Describe taxonomy, habitat, morphology, and life cycles of different parasites of medical importance.

a2. Identify the aetiology of various parasitic infections.

a3. List the different measures used for treatment, prevention and control.

b- Intellectual Skills:

b1. Relate knowledge of pharmacy related subjects in practice settings regarding community health and parasitic diseases.

b2. Analyze patient's state of health.

b3. Outline measures related to health promotion, disease prevention & encouraging self-care.

b4. Apply efficient and effective methods of diagnosis.

b5. Select appropriate treatment for parasitic diseases.

c. Professional and Practical Skills:

c1. Diagnose parasitic infections microscopically, biochemically and serologically.

c2. Differentiate between various parasitic diseases and clinical pictures associated with them.

d. General and Transferable Skills:

d1. Interpret patient clinical data.

d2. Contribute to the development of health care.

3. Contents

Week	Topic	No. of hours	Lecture	Practical
One	Introduction to Parasitology -Protozoa Class A (Rhizopoda: *Entamoeba histolytica*) -Protozoa Class B (Ciliates: *Balantidium coli*). Introduction to Pathology Inflammation	4	1 1	2 (Parasitology) Protozoology
Two	-Protozoa Class C (Flagellates) 1. *Giardia lamblia* 2. *Trichomonas Vaginalis* Inflammation	4	1 1	2 (Parasitology) Trematodes Cestodes
Three	3. Blood and tissue flagellates *(Leishmania & Trypanosoma)* Inflammation (Cont.) Repair	4	1 1	2 (Parasitology) Nematodes
Four	Protozoa Class D (Sporozoa) 1. Plasmodium 2. Toxoplasma Cell Injury: Degeneration Necrosis + **First Midterm Exam**	4	1 1	2 (Parasitology Revision)
Five	Class Trematodes 1.*Fasciola hepatica & Fasciola gigantica* 2. *Schistosoma haematobium & Sch. mansoni*. 3. *Heterophyes heterophyes*	4	1	2 Parasitology

	Gangrene Cardiovascular diseases: Edema& thrombosis		1	**Practical Exam**
Six	Class Cestodes 1. *Taenia saginata* 2. *Taenia solium* Cardiovascular diseases: Embolism, ischaemia, infarction.	4	1 1	2 (Pathology) Inflammation: Gross& Microscopic
Seven	Class Cestodes (continued) 3.*Hymenolepis nana* 4.*Echinococcus granulosus* Hyperaemia, congestion, hemorrhage, shock.	4	**1** **1**	2 (Pathology) a. Degeneration & necrosis gross pictures. b. Circulatory disturbances gross pictures.
Eight	**Second Midterm Exam**			
Nine	Class Nematodes *1.Ascaris lumbricoides* *2.Enterobius vermicularis* Intracellular accumulation & extracellular depositions	4	1 1	2 (Pathology) a.Cardiovascular diseases microscopical pictures. b. Intracellular accumulation and extracellular depositions gross& microscopic c. Growth disturbances gross& microscopic
Ten	Class Nematodes (continued) *3. Ancylostoma duodenale* *4. Strongyloides stercoralis* Growth disturbances	4	1 1	2 (Pathology Revision)

Eleven	Class Nematodes (continued) *5. Trichinella spiralis* *6. Trichocephalus trichiurus* *7. Wuchereria bancrofti* Neoplasia	4	1 1	2 Pathology Practical Exam
Twelve	Revision	2	2	-
Thirteen	Revision	2	2	-
Total number of hours		44	24	20
Fourteen	Final Exams			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1 - Lectures.
4.2 - Discussion sessions.
4.3 - Assignments
4.4- Practical work

5. Student Assessment Methods

5.1. Written exams to assess knowledge and understanding as well as intellectual skills
5.2 Practical exam to assess professional and practical skills.
5.3. Semester work (Assignments) to assess all types of skills including general and transferrable skills.

6. Assessment Schedule

Assessment 1 First Midterm Exam Week 4
Assessment 2 Second Midterm Exam Week 8
Assessment 3 Practical (1st& 2nd) Weeks 5, 10 and 11
Assessment 4 Final Written Exam Week 15/16
Assessment 5 Semester Work (Assignments) (During the semester)

Weighting of Assessments

First Mid-Term Examination	10	%
Second Mid-Term Examination	20	%
Practical Examination	30	%

Final-Term Examination	30	%
Semester work (assignments)	10	%
Total	**100**	**%**

7. List of References

7.2 Course Notes

Lecture notes of Parasitology& Pathology prepared by instructors.

7.2 Essential Books (Text Books)

Human Parasitology, Fourth Edition by Burton J. Bogitsh, Clint E. Carter and Thomas N. Oeltmann (2012)

Pathology Illustrated. Robin Reid, Fiona Roberts sixth edition 2005

7.3 Recommended Books

Pathophysiology, Carol Mattson Porth, Lippincot 6th Edition, 2002.

Pathologic Basis of Disease, Robbins and Cortran, Elsevier Saunders 7th Edition, 2005.

c. Medical Parasitology: A Self-Instructional Text by Ruth Leventhal and Russell Cheadle (2011)

Clinical Parasitology: A Practical Approach, 2 edn by Elizabeth A. Zeibig (2012)

Medical Parasitology: A Self-Instructional Text by Ruth Leventhal and Russell Cheadle (2002)

7.4 Periodicals, Websites,etc

Urbana Atlas of Pathology
http://www.pathguy.com/lectures.htm.
www.ncbi.nlm.nih.gov
www.cdc.gov
www. parasitology.com

8. Facilities Required for Teaching and Learning

Computer aided with data show.

Course Coordinator: Dr. Marwa Tammam

Head of Department: Associate professor. Dr. Amal Emad

Department Approval Date: September 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Basic Microbiology (PMI 311)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology Department
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Basic Microbiology **Course Code: PMI 311**
Prerequisites: Physiology PHL 203
Students' Level/Semester: Third Level/ Fifth Semester
Credit hours: **3 (2+1)**
Actual teaching hours per week:
Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

To provide pharmacy students with good knowledge on the impact and concepts of microbiological and immunological studies in the field of pharmacy and medicine.

2. Intended Learning Outcomes (ILOs)

By the end of this course the students should be able to:

a- Knowledge and Understanding:

a1. Define the principle and foundation of microbiology: its history and origins
a2. Explain the structure of prokaryotic and eukaryotic cells
a3. Discuss the structure and function of nuclear material of microorganisms.
a4. Describe the process of DNA replication and the role of different enzymes in this process.
a5. Outline the process of transcription and translocation including the role of mRNA, tRNA, and rRNA
a6. Describe microbial variation.
a7. Review the main stages in the development of an infection
a8. Summarize the characteristics of basic host defenses
a9. Explain the nature of the different types of innate, nonspecific defense
a10. Discuss the characteristic and the functions of the lymphatic system
a11. Describe the main events in the inflammatory reaction explaining what is occurring in each.

a12. Define phagocytosis and which cells serve this function
a13. Recognize the complement system, its origin, pathways, and basic functions
a14. Define antigen and its different types.
a15. List the major events in the origin of diversity in the immune system
a16. Discuss the structure and basic functions of the major types of immunoglobulins
a17. Distinguish the main activities of cell-mediated immunities
a18. Identify different types of vaccines
a19. Outline the concepts of the main types of serological reactions and their uses in diagnosis

b. Intellectual Skills:

b1. Relate infectious diseases and microbial virulence factors of microorganism.
b2. Outline the ways in which bacteria acquire genetic information.
b3. Relate bacterial structures and the microorganism pathogenesis.
b4. Detect why an individual might not develop infectious diseases after exposure to a pathogen.
b5. Relate the humoral and cell mediated immunity
b6. Compare between active and passive immunity
b7. Distinguish between natural and acquired immunity.
b8. Differentiate between the lines of immune defense, describing examples of each
b9. Predict the characteristics of antigen, the property of antigenicity, and epitopes
b10. Interpret the actions of antibodies in protective immune reactions
b11. Outline the major categories of immunoprophylaxis
b12. Differentiate between natural and artificial immunities and between active and passive immunities using examples.
b13. Point out the mechanism of hypersensitivity reactions

b- Professional and Practical Skills:

c1. Detect different microorganisms using microscopy and culture technique.
c2. Identify microorganisms in clinical specimen using scientific methodology.
c3. Apply different types of staining of the bacteria
c4. Prepare microorganism in pure colonies.
c5. Apply different serological techniques.

c- General and Transferable Skills:

d1. Support projects related to specific topics of microbial growth, genetics and immunology.
d2. Argue about new microbial problems.
d3. Relate microorganisms to phenomenon.

d4. Interpret the outcome of immunoassay methods
d5. Conclude the role of different immunoprophylaxis
d6. Explain the difference between the protective and destructive mechanism immune system
d7. Discriminate between the natural and adaptive immunity
d8. Relate the cause of hemolytic diseases of the newborn and ways to prevent it

3. Contents

Week	Topic	No. of hours	Lecture	Practical
One	**Basic microbiology:** Introduction & Historical review. **Immunology:** Host-parasite relationship.	**2**	**1** **1**	
				-
Two	**Basic microbiology:** Classification of microorganisms. General properties of bacteria. **Immunology:** Innate immunity.	**4**	**1** **1**	
	• *Safety measures in Microbiology lab* • *Wide distribution of microorganisms*			**2**
Three	**Basic microbiology:** Morphology & Structure of bacteria. **Immunology:** Immunogens: definition, characters and types.	**4**	**1** **1**	
	• *Microscopic Examination of microorganisms by simple stain*			**2**
Four	**Basic microbiology:** Cont. Structure of bacteria. **Immunology:** Acquired immune response: 1- Cell mediated immune response **+ First Midterm Exam**	**4**	**1** **1**	
	• *Microscopic Examination of single microorganisms by Gram Stain*			**2**

Five	**Basic microbiology:** Cont. Structure of bacteria **Immunology:** Con. Cell mediated immune response	**4**	**1** **1**	
	• *Microscopic Examination of single & mixture of microorganisms by Gram Stain* • *Negative Stain*			**2**
Six	**Basic microbiology:** Bacterial metabolism **Immunology:** Acquired immune response 2- Humoral immune response	**4**	**1** **1**	
	• *Acid Fast Stain* • *Spore stain*			**2**
Seven	**Basic microbiology:** Bacterial reproduction& growth. **Immunology:** Immunoglobulin	**4**	**1** **1**	
	• *Capsule Stain* • *Motility test* • *Isolation of microorganisms by streaking*			**2**
Eight	**Midterm Exams**			
Nine	**Basic microbiology:** Virulence factors of bacteria **Immunology:** Superantigen The complement system.	**4**	**1** **1**	
	• *Serological tests* • *Blood grouping test* • *Revision,, Gram stain for mixture of bacteria*			**2**
Ten	**Basic microbiology:** Bacterial Genetics**:** DNA structure & replication. **Immunology:** Immunoprophylaxis	**4**	**1** **1**	

	Hypersensitivity reactions			
	Revision			**2**
Eleven	**Basic microbiology:** Gene expression. Plasmids **Immunology:** Cont. Hypersensitivity reactions	**4**	**1** **1**	
	Final Practical Exam 1			**2**
Twelve	**Basic microbiology:** Bacterial variations Gene transfer **Immunology:** Con. Antigen- Antibody reactions.	**4**	**1** **1**	
	Final Practical Exam 2			**2**
Thirteen	**Basic microbiology:** Cont. Gene transfer Bacteriophage **Immunology:** Antigen- Antibody reactions.	**2**	**1** **1**	
				-
Total No. of hours		**44**	**24**	**20**
Fourteen	**Final Exams**			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1. Lectures (power point)

4.2. Videos

4.3. Practical sessions

5. Student Assessment Methods

5.1. Written exams to assess understanding & knowledge as well as intellectual skills.

5.2. Practical exams to assess professional and practical skills

5.3. Oral exam to assess all types of skills and mainly general and transferrable skills

5.4. Assignments to assess professional & practical skills.

Assessment Schedule

Assessment 1: First Midterm Exam Week 4.

Assessment 2: Second Midterm Exam	Week 8.
Assessment 3: Practical Exam	Week 11, 12.
Assessment 4: Final written Exam	Week 15/16.
Assessment 5: Oral Exam	Week 15/16.
Assessment 6: Assignments	During the semester

Weighting of Assessments

Mid-Term Examination (1st &2nd)	20%
Oral Examination	10%
Practical Examination	30%
Assignments	10%
Final-Term Examination	30%
Total	**100%**

6. List of References

6.1. Course Notes:

Basic Microbiology Lab manual

6.2. Essential Books (Text Books)

Foundation in Microbiology, Talaro and Chess, 8th Edition, McgrawHill ;(2012).

6.3. Recommended Books

Medical Microbiology; Jawetz, Melnick, and Adelberg's ;25th ed edition,(2010)

Basic Immunology function & disorders of the immune system. Abbas & Lichtman. Abbas, Abul K, Lichtman, Andrew H; 3rd ed.; Elsevier, (2009).

6.4. Periodicals, Websites, ……etc

Journal of basic Microbiology: An International Journal on Biochemistry, physical, Genetics. Morphology and Ecology of microorganisms

http//science.nhmccd.edu/boil/animation.htm
http//www.medlineplus.gov/
http//www.ncbi.nlm.nih.gov/enterz/query.fcgi

7. Facilities Required for Teaching and Learning

Computer aided with data show.

Equipments and supplies for practical sessions:

- **Autoclave**
- **Refrigerator**
- **Hot air Oven**
- **Incubator**

- **Microscope with oil immersion lens**

Course Coordinator
Dr.Marwa Raafat

Head of Department
Ass. Prof. Dr. Amal Emad

Department Approval Date: September 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Public and Environmental Health (PMI 413)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Public and Environmental Health **Course Code: PMI 413**

Prerequisites: **Medical Microbiology (PMI 412)**

Students' Level/Semester: **Fourth Level/ 7th Semester**

Credit hours: **2 (2+0)**

Actual teaching hours per week:

Lectures: 2/week **Practical:** 0/week **Tutorial:** N/A **Total:** 2/week

B. Professional Information

1. Overall Aim of Course

To provide pharmacy student with basic knowledge on public health to develop the attitude of the student as to health promotion, prevention of diseases and the impact of environment on health. Students should understand the relationship between health and environmental quality such as water, sewage disposal, air, industrial and toxic wastes, occupational hazards, nutrition, child and mother care and genetic counseling. Significant and stress emphasis will be laid upon viral diseases that are prevalent in Egypt. This will include introduction about viruses, different viral diseases. Hepatitis and viral gastroenteritis, viral diarrheal disease and viral respiratory illnesses are stressed.

2. Intended Learning Outcomes (ILOs)

By the end of this course students should be able to:

a- Knowledge and Understanding:

a1. Describe matters related to infection caused by bacteria, parasite, fungi, and viruses, such as mechanisms of transmission, prevention measures and control of diseases.

a2. Define vaccines, sera and immunization practice as to their application, side effects, conditions and doses.

a3. Mention the relation between health and environment as improvement of the quality of water, water sewage disposal, personal hygiene, the adverse effects of pollution on health.

a4. Identify potential health hazards of industrial wastes, contamination by toxin wastes, pesticides and fertilizers.

a5. Recognize the effect of unwise behavior on health as over nutrition, smoking cigarettes and refining from practicing exercise and its relationship with chronic diseases.
a6. Outline important child, prenatal and natal care, in addition to genetic counseling in some perspective parents.
a7. Mention methods to analyze and present biodata concerning morbidity, mortality rates in the community.
a.8.Describe the general biological and physical properties of viruses and how they differ from other infectious agents.
a.9.Explain the virus structures, function, and replication.
a.10.Describe the virus classification and the major properties of DNA & RNA viruses.
a.11. Memorize the effect of physical and chemical agents on viruses.
a.12.Mention the importance of cultivation of virus in diagnosis.
a.13. List viral pathogenesis, diseases and host response.
a.14.Relate diseases caused by DNA, RNA virus and syndromes.

b- Intellectual Skills:

b1. Relate between diseases and their causative factors.
b2. Illustrate the most important and effective way to reduce infectious diseases.
b3. Distinguish among sporadic, endemic, epidemic, and pandemic diseases.
b4. Illustrate preventive measures to control infectious diseases, nosocomial infection, and outbreaks.
b5. Interpret different risk factors that may increase the incidence of chronic diseases.
b 6. Distinguish symptoms of different viral diseases.
b7. Illustrate mechanism of pathogenesis and immunity to viral diseases.

c- Professional and Practical Skills:

c1. Develop community preventive measures to control the spread of infectious diseases.
c2. Appraise epidemiological studying methods of communicable and non-communicable diseases.
c3. Apply prophylactic measures to viral diseases.

d- General and Transferable Skills:

d1. Plan polices for treatment.
d2. Recommend a strategy for management of a crisis.
d3. Develop general education concerning public health.

3. Contents

Week	Topic	No. of hours	Lecture
One	Communicable diseases: Epidemiology Studies of communicable diseases. Introduction to viral diseases	2	1 1
Two	Types of epidemiological studies. Continue Introduction to viral diseases	2	1 1
Three	Hospital acquired diseases. Outbreaks. DNA viral diseases	2	1 1
Four	Environmental Health: Air pollution+ 1st Midterm Continue DNA viral diseases	2	1 1
Five	Food pollution. RNA viral diseases	2	1 1
Six	Water pollution Continue RNA viral diseases	2	1 1
Seven	Treatment of Sewage Continue RNA viral diseases	2	1 1
Eight	2nd midterm exam	-	-
Nine	Non communicable diseases: Rheumatic fever and rheumatic heart disease and Diabetes mellitus Continue RNA viral diseases	2	1 1

Ten	**Non communicable diseases : Cancer, Obesity, smoking.** **Different types of hepatitis viral diseases**	**2**	**1** **1**
Eleven	**Family Health** **Continue Different types of hepatitis viral diseases**	**2**	**1** **1**
Twelve	**Family Health** **HIV and AIDS**	**2**	**1** **1**
Thirteen	**Revision**	**2**	**2**
Total No. of hours		**24**	**24**
Fourteen	**Final Exam**		
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1 Lectures
4.2 Illustrative videos
4.3 Projects & assignments

5. Student Assessment Methods

5.1 Written to assess knowledge and understanding as well as intellectual skills.
5.2 Projects & assignments to assess knowledge and understanding as well as professional and practical skills.
5.3 Oral exam to assess all skills including transferable skills.
5.4 Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1… 1st Mid Term exam Week: 4
Assessment 2… 2nd Mid Term exam Week: 8
Assessment 3… Final written exam Week: 15/16
Assessment 4… Oral exam Week: 15/16
Assessment 5…Projects and Assignments (During the semester)
Assessment 6…..Semester Work (Participation) (During the semester)

Weighting of Assessments

1st Midterm exam	10%
2nd Mid-Term Examination	20%
Final-Term Examination	40%
Oral Examination	10%
Semester Work + Assignments + Projects	20%
Total	**100%**

6. List of References

6.1. Course Notes

Staff lectures handouts are **uploaded to the Moodle**.

6.2. Essential Books (Text Books):

Foundation in Microbiology, Talaro and Chess, 8th Edition, McgrawHill Edition;(2012).

Essential public health, L.J. Donaldson and R.J. Donaldson, 2nd edition;(2006).

6.3. Recommended Books:

Microbiology for health , Burton, Gwendolyn R. W. (Gwendolyn R. Wilson); Engelkirk, Paul G.; 7th ed, Lippincott Williams & Wilkins, (2004)

6.4. Periodicals, Websites, ……etc:

http://www.ncbi.nih.gov/books/bv.fcgi?rid=mboc4.TOC depth

7. Facilities Required for Teaching and Learning

Computer equipped with data show

Internet

Course Coordinators:

Dr. Marwa Raafat

Head of Department : Assc. Prof. Dr. Amal Emad ELDin
Department Approval Date: September 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Medical Microbiology (PMI 412)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Medical Microbiology **Course Code: PMI 412**

Prerequisites: Basic Microbiology and Immunology (PMI 311)

Students' Level/Semester: Level Four/ Seventh Semester

Credit hours: 3 (2+1)

Actual teaching hours per week:

Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

The course provides concise information about important bacterial infectious diseases related to different groups.

It also gives detailed information about the biology of the etiological agent(s), mode of transmission, pathogenesis and clinical symptoms, immunogenicity, laboratory diagnosis as well as prophylaxis, control and treatment of each disease.

2. Intended Learning Outcomes (ILOs)

By the end of this course students should be able to:

a- Knowledge and Understanding:

a1. Describe bacterial infectious diseases.

a2. Distinguish different characteristics of infectious organisms.

a3. Relate structures and metabolic characters to virulence.

a4. List instructional, conceptual and methodological aspects of medical microbiology.

a5. Identify sources of diseases.

a6. Recognize the mode of transmission of infectious diseases.

a7. List diseases caused by each bacterial spp.

b- Intellectual Skills:

b1. Relate the infectious diseases and microorganisms.

b2. Interpret infectious diseases and microbial virulence factors

c- Professional and Practical Skills:

c1. Correlate clinical symptoms to diseases.

c2. Manipulate laboratory diagnosis of infectious diseases.

c3. Differentiate between diseases based on related symptoms.
c4. Apply scientific methodology to identify microorganisms in clinical specimen
c5. Differentiate between Gram positive cocci based on laboratory diagnosis
c6. Contrast between *Enterobacteriaecae* based on laboratory diagnosis
c7. Compare between Gram positive rods based on laboratory diagnosis
c8. Differentiate between non - *Enterobacteriaceae* Gram negative rods

d- General and Transferable Skills:

d1. Appraise the measures for control of infectious diseases.
d2. Demonstrate planning policies for treatment as well as prophylaxis measure for each disease.
d3. Support patient's information confidentiality.
d4. Communicate with other health care professions.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Gm +ve Bacilli (Cornybacteria Gm +ve Bacilli (Bacillus) --- **Culture media**	**4**	**2**	**2**
Two	Gm +ve Bacilli (Clostridia) --- **Gm +ve cocci staphylococci**	**4**	**2**	**2**
Three	Gm +ve cocci Staphylococci --- **Gm +ve cocci streptococci**	**4**	**2**	**2**
Four	Gm +ve cocci Streptococci + First Midterm --- **Gm +ve Bacilli (Corynbacterium, Clostridium, acid fast bacilli**	**4**	**2**	**2**
Five	Gm -ve cocci (Neisseria) --- **Enterobacteriaceae**	**4**	**2**	

				2
Six	Gm -ve Bacilli (Enterics) **Enterobacteriaceae**	**4**	**2**	**2**
Seven	G-ve Bacilli (cont.) **Other Gm –ve bacteria (Pseudomonas, Vibrio)**	**4**	**2**	**2**
Eight	**Second Midterm Exam**			
Nine	Gm -ve Bacilli (Respiratory, Zoonotic) Revision	**4**	**2**	**2**
Ten	Mycobacterium tuberculosis, lepreae Final Practical Exam	**4**	**2**	**2**
Eleven	Mycoplasma, Chlamydia, Rickettesia, Spirochaetes	**4**	**2**	**-**
Twelve	Fungi	**2**	**2**	**-**
Thirteen	Fungi (cont.)	**2**	**2**	**-**
Total number of hours		**44**	**24**	**20**
Fourteen	**Final Exam**			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

- **4.1.** Lectures (power point)
- **4.2.** Videos
- **4.3.** Practical sessions

4.4. Office hours

5. Student Assessment Methods

5.1. Written exam to assess Overall knowledge and intellectual skills.
5.2. Practical exam to assess Professional and practical skills.
5.3. Assignments to assess professional & practical skills.
5.4. Oral exam to assess all types of skills and mainly general and transferrable skills.

Assessment Schedule

Assessment 1: First Midterm Exam	Week 4
Assessment 2: Second Midterm Exam	Week 8
Assessment 3: Practical Exam	Week 10
Assessment 4: Final written Exam	Week 14/ 15
Assessment 5: Oral Exam	Week 14/15.
Assessment 6: Assignments	During the semester

Weighting of Assessments

Mid-Term Examination (1^{st} &2^{nd})	20%
Oral Examination	10%
Practical Examination	30%
Semester Work (Assignments)	10%
Final-Term Examination	30%
Total	100**%**

6. List of References

6.1. Course Notes

Basic Microbiology Lab manual. Instructors lecture notes

6.2. Essential Books (Text Books)

Foundation in Microbiology; Talaro and Chess, 8^{th} Edition, McgrawHill;(2012).

6.3. Recommended Books

Medical Microbiology; Jawetz, Melnick, and Adelberg's ;25^{th} ed edition,(2010)

Diagnostic Microbiology; Baron, E.J. and Finegold, M. Bailey and Scotts. (10^{th} edition), the CV Mosby Company

Henery's Clinical Diagnosis and Management by Laboratory Methods, McPherson, Richard A., MD; 22th edition, (2011)

6.4. Periodicals, Websites, ……etc

Journal of medical Microbiology
Journal of infectious diseases

Websites:
http://www.cdc.gov
http://www.indstate.edu/thcme/micro/

7. **Facilities Required for Teaching and Learning**

Computer aided with data show.
Equipments and supplies for practical sessions:

- Autoclave
- Incubator

Microscope with oil immersion lens

Course Coordinator
Ass. Prof. Dr. Amal Emad ElDin Ali

Head of Department
Ass. Prof. Dr. Amal Emad ElDin Ali

Department Approval Date: Sep. 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Biotechnology (PMI 515)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Biotechnology **Course Code: PMI 515**

Prerequisites: **Biochemistry 2 (PHL 352)**

Students' Level/Semester: **Fifth Level/ 9th Semester**

Credit hours: **2 (2+0)**

Actual teaching hours per week:

Lectures: 2/week **Practical:** 0/week **Tutorial:** N/A **Total:** 2/week

B. Professional Information

1. Overall Aim of Course

Biotechnology learning program is crucial for pharmacy students. It includes study of general introduction to biotechnology and fermentation, microbial growth processes (mode of fermentation processes; design of a fermenter; achievement and maintenance of aseptic conditions in the fermenter), bioconversion process & major biotechnological products, bioremediation, energy production. The course also provides a detailed information on genetic engineering (applications; recombinant DNA technology; DNA cloning, hybridizations, genetically engineered proteins and immunological products.

2. Intended Learning Outcomes (ILOs)

By the end of this course students should be able to:

Knowledge and Understanding:

a1. Identify conventional and modern biotechnological techniques.
a2. List different parts of bioreactor.
a3. Identify strategies for improvement of fermentation process
a4. List different problems which may be encountered in biotechnology
a 5. Name the applications of biotechnology in environmental maintenance.
a 6. List different categories of biotechnology products.
a 7. Outline different methods for enzyme stabilization.
a 8. Discuss primary and secondary metabolites with examples.
a 9. Describe the application of biotechnology in energy production.
a 10. Describe the application of biotechnology in production of vaccines and monoclonal antibodies.
a 11. List different cellular and molecular biology techniques and their application in production of biotechnological and recombinant products.

Intellectual Skills:

b1. Apply biotechnological knowledge correctly and independently.

b2. Illustrate various process developments for many valuable biotechnological products.

b3. Predict how the genetically modified organisms are produced.

Professional and Practical Skills:

c1. Relate production of biotechnological products & developing processes, in such a way that the finished pharmaceutical product will be suitable for its purpose.

c2. Assess information of different fermentation systems quickly and reliably.

General and Transferable Skills:

d 1. Conclude the information from different sources.

d2. Apply problem solving for encountered problems.

d 3. Interpret how the genetically modified organisms are produced.

d 4. Describe different criteria of the major biotechnological recombinant products in the market.

3. Contents

Week	Topic	No. of hours	Lecture
One	General introduction to biotechnology and fermentation	2	2
Two	Introduction to all elements in biotechnology	2	2
Three	Scheme of the bioprocesses	2	2
Four	Biomass applications + **1st midterm exam**	2	2
Five	Microbial enzymes and biosensors	2	2
Six	Primary metabolites	2	2
Seven	Secondary metabolites	2	2
Eight	**2nd midterm exam**	-	-
Nine	Environmental biotechnology	2	2
Ten	Biotransfrmation and immunological products	2	2
Eleven	Genetic engineering	2	2
Twelve	Genetic engineering	2	2
Thirteen	Revision	2	2
Total No. of hours		24	24
Fourteen	Final Exams of Faculty		
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1 Lectures
4.2 Illustrative videos
4.3 Projects

5. Student Assessment Methods

5.1 Written to assess knowledge and understanding as well as intellectual skills.
5.2 Projects to assess knowledge and understanding as well as professional and practical skills.
5.3 Oral exam to assess all skills including general and transferable skills.

Assessment Schedule

Assessment 1…	1st Mid Term exam	Week: 4
Assessment 2…	2nd Mid Term exam	Week: 8
Assessment 3…	Final written exam	Week: 15/16
Assessment 4…	Oral exam	Week: 15/16
Assessment 5	Semester work (Projects)	during the semester

Weighting of Assessments

1st Midterm exam	10%
2nd Mid-Term Examination	20%
Final-Term Examination	40%
Oral Examination	10%
Semester Work (Projects)	20%
Total	100**%**

6. List of References

6.1. Course Notes

Staff lectures handouts are **uploaded to the Moodle**.

6.2. Essential Books (Text Books)

Introduction to biotechnology; Thieman, William J; Palladino, Michael Angelo 3rd ed. (2013)

6.3. Recommended Books

Basic Biotechnology; 2nd edition; Eds. Colin Ratledge and Bijorn Kristiansen, Cambridge press (2001)

Pharmaceutical biotechnology;Purohit, S S; Kakrani, H N; Saluja, A K Jodhpur, India : Student edition, (2010)

6.4. Periodicals, Websites, ……etc

- Microbiology & Molecular Biology Reviews (free web site) http://mmbr.asm.org/contents-by-date.1995.shtml
- Nucleic acids research SMART; Letunic *et al*., 2004; http://nar.oupjournals.org/ cgi/content/full/32/suppl_1/D142
- Biotechnology letters
- Nature biotechnology

7. Facilities Required for Teaching and Learning

- Computer equipped with data show
- Internet

Course Coordinator Assc.Prof. Dr. Amal Emad ElDin

Head of Department Assc. Prof. Dr. Amal Emad ELDin

Department Approval Date: September 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Pharmaceutical Microbiology (PMI 514)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology Department
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Pharmaceutical Microbiology **Course Code: PMI 514**

Prerequisites: Basic Microbiology and immunology (PMI 311)

Students' Level/Semester: Fifth Level/ Tenth Semester

Credit hours: **4 (3+1)**

Actual teaching hours per week:

Lectures: 3/week **Practical:** 2/week **Tutorial:** N/A **Total:** 5/week

A. Professional Information

1. Overall Aim of Course

To provide pharmacy students with good knowledge on the impact of microbial studies on the field of pharmacy, pharmaceutical industry and sterilization processes. The course includes detailed information on different sterilization techniques applied in pharmaceutical industry, antimicrobial agents and chemotherapy as well as evaluation of the effectiveness of antimicrobial agents.

2. Intended Learning Outcomes (ILOs)

By the end of this course the student should be able to:

a- Knowledge and Understanding:

a1. Classify chemotherapeutic agents, antimicrobial agents, and antibiotics as to their intended purpose.
a2. State the five most common mechanisms of action of antimicrobial agents.
a3. Identify the most common mechanisms by which bacteria become resistant to antimicrobial agents.
a4. State three undesirable effects of antimicrobial agents.
a5. Describe different methods used for assay of antibiotics.
a6. Identify microbiological quality of pharmaceutical products.
a7. Define quality assurance, quality control, GMP, GLP, and total quality assurance.
a8. Define sterilization, disinfection, preservation, and sanitization.
a9. List the ways in which disinfectant kill microorganisms.

a10. Define non antibiotic antimicrobial agents, their pharmaceutical and surgical applications
a11. Recognize the use of preservation in pharmaceutical industry.
a12. Outline way of microbial resistance to disinfectant

b- Intellectual Skills:.

b1. Categorize antimicrobial agents.
b2. Differentiate between bactericidal and bacteriostatic agents.
b3. Relate different factors during prescribing antibiotic.
b4. Outline chemoprophylactic uses of antibiotics.
b5. Identify reasons for difficulties in treatment of tuberculosis.
b6. Analyze lines of treatment of tuberculosis.
b7. Differentiate between synergism and antagonism with regard to antimicrobial agents.
b8. Categorize disinfectants according to their effect
b9. Illustrate several factors that can influence the effectiveness of disinfectant.
b10. Criticize methods used for evaluation of disinfectant
b11. Relate basic principle of preservation of medicines
b12. Select when to use sterilization, disinfection, and sanitization.
b13. Point out the importance of sterility testing of pharmaceutical products.
b14. Illustrate kinetic and mechanism of thermal destruction of microorganisms.
b15. Compare advantages, disadvantage, and limitation of different sterilization techniques.
b16. Demonstrate the efficacy of sterilization processes.

c- Professional and Practical Skills:

c1. Apply pharmaceutical microbiology evaluation assays for antibiotics, and nonantibiotics antimicrobial agents.
c2. Assess the antimicrobial activity of drugs.
c3. Select the effective antibiotic for different bacterial culture.
c4. Interpret the effect of combination of antibiotics
c5. Modify microbiological method for assay of antibiotics in serum, and body fluids.
c6. Assemble some sterilization methods.
c7. Perform sterility testing for sterile pharmaceutical products.
c8. Apply modification of sterility test for different forms of pharmaceutical products.
c9. Detect the count of bacteria using viable count technique.
c10. Differentiate between sterile and nonsterile products.
c11. Relate several factors to the efficacy of sterilization processes.

c12. Predict several factors that can influence the effectiveness of disinfectant.

d- General and Transferable Skills:

d1. Evaluate benefits and hazards of random using of antibiotics.
d2. Recommend the most appropriate antibiotic in treatment of infection.
d3. Estimate benefits of using the selective antibiotic in proper regimen.
d4. Argue patients and other health care professionals about safe and proper use of antibiotics
d5. Select the best method for sterilization of different pharmaceutical products.
d6. Select the best method for disinfection of different articles in hospitals.
d7. Appraise the "aseptic technique" in microbiology labs and in sterile areas.
d8. Evaluate research related to specific topics related to microbial resistance to antibiotics.

3. Contents

Week	Topic	No. of hours	Lecture	Practical
One	Microbial quality of pharmaceutical products Classes of pharmaceutical products Sterilization: definitions, and characters. Limitation and significance of sterilization	**3**	**3**	
				-
Two	Methods of sterilization Kinetic and mechanism of thermal death Heat sterilization Radiation sterilization	**5**	**3**	
	Lethal effect of heat			**2**
Three	Filtration sterilization Chemical sterilization Sterilization indicators Sterility test	**5**	**3**	
	Limit test 1: viable counts. Limit test 2: test for pathogen.			**2**
Four	• Antimicrobial agents • Definitions, classification • Mechanism of action of antibiotics • **First Midterm Exam**	**5**	**3**	
	Tests for sterility for simple ampoules and vials			**2**
Five	• Cont. Antibiotics: mechanism of action • Origin of bacterial resistance	**5**	**3**	

	Determination of the spectrum of activity of antibiotic. Effect of combination of two drugs.			**2**
Six	• Mechanism of resistance development • Combination of antibiotics • Antibiotic policy	**5**	**3**	
	Antibiotic sensitivity test			**2**
Seven	• Antifungal agents • Antitubercular agents • Non-chemotherapeutic agents • Different classes of non-antibiotic antimicrobial agents	**5**	**3**	
	Determination of the MIC in liquid media diffusion			**2**
Eight	**Second Midterm Exam**			
Nine	• Evaluation of bacteriostatic and bactericidal agents. • Evaluation of antiseptic agents	**5**	**3**	
	Determination of the MIC by agar			**2**
Ten	• Evaluation of fungicidal agents • Evaluation of sporicidal agents	**5**	**3**	
	Assay of antibiotics by agar diffusion			**2**
Eleven	• Evaluation of antitubercular agents • Microbiological assay of antibiotics	**5**	**3**	
	Revision			**2**
Twelve	• Cont. Microbiological assay of antibiotics • Rapid methods for evaluation of antibiotics	**5**	**3**	
	Final practical Exam			**2**
Thirteen	• Evaluation of Preservatives • Evaluation of Disinfectant	**3**	**3**	
				-
Total No. of hours		**56**	**36**	**20**
Fourteen	**Final Exams**			
Fifteen				

Sixteen				

4. Teaching and Learning Methods

- **4.1.** Interactive Lectures
- **4.2.** Practical periods
- **4.3.** Illustrative videos
- **4.4.** To be removed
- **4.5.** Assignment

5. Student Assessment Methods

- **5.1.** Practical exams to assess application and analysis (professional and practical skills).
- **5.2.** Written exams to assess knowledge, comprehension, analysis and evaluation.
- **5.3.** Semester Work (Assignments) to assess application as well as general and transferrable skills.
- **5.4.** Oral exam to assess all types of skills and mainly general and transferrable skills.

Assessment Schedule

Assessment 1: First Midterm Exam	Week 4.
Assessment 2: Second Midterm Exam	Week 8.
Assessment 3: Practical Exam	Week 12.
Assessment 4: Final written Exam	Week 15/16.
Assessment 5: Oral Exam	Week 15/ 16
Assessment 6: Semester Work (Assignments)	During the semester

Weighting of Assessments

First Midterm Examination	5%
Second Midterm Examination	15%
Practical Examination	30%
Semester Work (Assignments)	10%
Final-Term Examination	30%
Oral Examination	10%
Total	100**%**

6. List of References

6.1. Course Notes

Lab manual of Pharmaceutical Microbiology.

6.2. Essential Books (Text Books)

Pharmaceutical Microbiology, Hugo WB and Russel AD.; 8th edition; Blackwell Scientific Publications, Oxford (2011)

6.3. Recommended Books

Foundation in Microbiology, Talaro and Chess, 8th Edition, McgrawHill;(2012).

6.4. Periodicals, Websites, ……etc

International Journal of Pharmaceutical Medicine

Journal of applied Microbiology

7. Facilities Required for Teaching and Learning

- Computer aided data-show
- Oil immersion microscope
- Incubator
- Autoclave
- Refrigerator
- Hot air Oven

Course Coordinator:

Dr. Marwa Tammam

Head of Department: Ass. Prof. Dr. Amal Emad El-Dien

Department Approval Date: September 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Diagnostic Microbiology (PMI 615)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Microbiology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Diagnostic Microbiology **Course Code: PMI 616**

Prerequisites: Basic Microbiology (PMI 311)

Students' Level/Semester: Elective course

Credit hours: **2 (1+ 1)**

Actual teaching hours per week:

Lectures: 1/week **Practical:** 1/week **Tutorial:** N/A **Total:** 2/week

B. Professional Information

1. Overall Aim of Course

To provide pharmacy student with basic knowledge of different techniques used in diagnosis, including phenotyping, genotyping and immunological techniques. The course provides the student with knowledge for proper interpretation and analysis of data for diagnosis of infectious diseases and recommendation for therapy.

2. Intended Learning Outcomes (ILOs)

By the end of this course students should be able to:

a- Knowledge and Understanding:

a1. Describe methods for culturing and biochemical identification of microorganisms.
a2. Discuss different immunological techniques.
a3. Explain different fingerprinting techniques.
a4. Mention clinical symptoms of case studied infectious diseases.
a5. Describe the main applications of polymerase chain reaction in identifying diseases.

b- Intellectual Skills:

b1. Relate between diseases and diagnostic procedures.
b2. Distinguish symptoms of different infectious diseases.
b3. Interpret data from various diagnostic procedures
b4. Appraise the basis of biochemical and other methods of testing
b5. Apply the basis of immunological techniques

b6.Distinguish the basic principle of genotyping methods

c- Professional and Practical Skills:

c1. Design several techniques in specimen collection and the concern in acquiring good cultures.
c2. Apply different methodologies for culturing and phenotypic identification of microorganisms
c3. Interpret the identification of infectious agent in a flowchart.
c4. Evaluate some immunological techniques
c5. Explain how antigen – antibody reactions are detected and quantified
c6. Apply methodologies for some fingerprinting techniques
c7. Differentiate between closely related microorganisms by laboratory diagnosis.

d- General and Transferable Skills:

d1. Demonstrate ability to solve problems. .
d2. Relate between infectious agent and symptoms of disease.
d3. Provide guidance concerning recommendation of therapy.

3. Contents

Week	Topic	No. of hours	Lecture	Practical
One	Introduction on different techniques used in laboratory diagnosis	2	1	1
Two	Methods of Specimen collection	2	1	1
Three	Phenotypic methods: isolation, identification, biochemical tests general principle	2	1	1
Four	Phenotypic methods: isolation, identification, biochemical tests + **1st midterm exam**	2	1	1
Five	Phenotypic methods: isolation, identification, biochemical tests	2	1	1
Six	Immunological tests: Basic principle	2	1	1
Seven	Immunological tests: different types	2	1	1
Eight	**2nd midterm exam**	-	-	-
Nine	Genotypic tests: main principle	2	1	1
Ten	Genotypic tests: Fingerprinting	2	1	1

	techniques: restriction endonuclease analysis			
Eleven	Application of polymerase reactions, real time PCR in diagnosis of infectious diseases	2	1	Final practical
Twelve	Nucleic acid hybridization techniques, Sequencing	1	1	-
Thirteen	Revision	1	1	-
Total No. of hours		22	12	10
Fourteen	Final exam	-	-	-
Fifteen	Final exam	-	-	-

4. Teaching and Learning Methods

a. Lectures
b. Practical
c. Assignments

5. Student Assessment Methods

5.1 Written exams to assess knowledge and understanding as well as intellectual skills.
5.2 Practical to assess professional and practical skills.
5.3 Lab performance to assess knowledge and understanding of the practical part, intellectual skills as well as professional and practical skills.
5.4 Assignments to assess current understanding
5.5. Semester Work (Assignments) to assess all types of skills.

Assessment Schedule

Assessment 1… 1st Mid Term exam Week: 4
Assessment 2… 2nd Mid Term exam Week: 8
Assessment 3 … Practical Exam Week: 11
Assessment 4… Final written exam Week: 14-15
Assessment 5….Lab performance each lab
Assessment 6….Semester Work (Assignments) (During the semester)

Weighting of Assessments

1st midterm Examination **5 %**
2nd Mid-Term Examination 15%
Final-Term Examination 40%
Practical 30%
Practical exam 25%
Lab performance 5%

Semester Work (assignments)	10%
Total	**100%**

6. List of References

6.1. Course Notes

Staff lectures handouts are **uploaded to the Moodle**.

lab manual **is given to each student**

6.2. Essential Books (Text Books):

Talaro and Chess: Foundation in Microbiology, Mcgrawhill, 8th edition.

6.3. Recommended Books:

- Koneman's Color Atlas and Textbook of Diagnostic Microbiology, 6th edition.
- Text book of diagnostic microbiology, Connie R. Mahon, Donald C. Lehman, George Manuselis, 4th edition.

6.4. Periodicals and Websites……

- **Periodicals**

Journal of clinical microbiology

Archive of clinical Microbiology

Diagnostic microbiology and infectious disease

- **Websites**

http://www.cdc.gov

http://www.indstate.edu/thcme/micro/

http://www.fda.gov/default.htm

7. Facilities Required for Teaching and Learning

Lecture hall

Audio-visual equipment

Equipped laboratory: thermal cycler, electrophoresis unit, gel documentation system, autoclave, incubator, centrifuge, spectrophotometer

Course Coordinators: Assoc. professor. Dr. Amal Emad ElDin Ali

Head of Department: Assoc. professor. Dr. Amal Emad ElDin Ali

Department Approval Date: September 2014

Reports Paper Writing (PMI 616)

Course Specifications

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All departments
Department offering the course:	Department of Microbiology
Academic year	2014/2015
Date of specifications approval:	September 2014

A. Basic Information

Course Title: Reports Paper Writing Course Code: PMI 616
Prerequisites: None
Students' Level/Semester: Elective
Credit hours: 2 (2+0)
Actual teaching hours per week:
Lectures: 2/week **Practical:** N/A **Tutorial:** N/A **Total:** 2 /week

B. Professional Information

1. Overall Aim of Course

This Course is designed to give students the basic principles of how to write reports. Students will be exposed to the concepts, terminology, principles and theories that comprise a course in report writing. Topics covered help to provide a broad range of knowledge about technical writing specifically long reports, emphasize research methodology, encourage critical thinking, and to convey a scientific as well as systematic approach to report writing.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a- Knowledge and Understanding:

a1. Demonstrate command of basic terminology, concepts and principles of writing reports.
a2. Identify the major approaches in Scientific Report Writing.
a3. Recognize multiple purposes of reports and their ability to be adaptive.
a4. Discuss the ways that Report Writing processes are accomplished and used.

b- Intellectual Skills:

b1.Apply scientific methodology in gathering data.
b2.Evaluate collected data.

b3.Distinguish between different styles and forms of documents.

c- Professional and Practical Skills:

c1. Write different types of documents.

c2. Analyze different situations.

d- General and Transferable Skills:

d1. Communicate effectively in different situations.

d2. Decide the best way to communicate in a given situation.

3. Contents

Week	Topic	No. of hours	Lecture
One	Systematic Approach to Writing and Report types (1)	**2**	**2**
Two	Systematic Approach to Writing and Report types (2)	**2**	**2**
Three	Ethical consideration in writing (1)	**2**	**2**
Four	Ethical consideration in writing (2) + **First Midterm Exam**	**2**	**2**
Five	Title-Acknowledgement-Contents' Page	**2**	**2**
Six	Introduction (1)	**2**	**2**
Seven	Introduction (2)	2	2
Eight	**Second Midterm Exam**		
Nine	Materials and methods (1)	2	2
Ten	Materials and methods (2)	**2**	**2**
Eleven	Discussion	**2**	**2**
Twelve	Appendices (Tables and Figures)	**2**	**2**

Thirteen	Presentation and Communication Skills (1)	**2**	**2**
Total hours		**24**	**24**
Fourteen	Final exams of faculty		
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1. Lectures.
4.2. Presentations.
4.3. Assignments.
4.4. Projects.

5. Student Assessment Methods

5.1. Written exams to assess the students' mastery of the material.
5.2. Assignments to assess their ability to gather data and write a scientific report.
5.3. Projects to assess their ability to deal with collected data and to evaluate it.
5.4. Presentations to assess their communication and interaction skills.

Assessment Schedule

Assessment 1 Midterm exams Week 4,8
Assessment 2 Final exam Week 14
Assessment 4 Project Week 13
Assessment 3 Classwork Assignments (throughout the course)

Weighting of Assessments

Mid-Term Examination 20 %
Final-Term Examination 40 %
Classwork Assignments 10%
Project 20 %
Attendance 10%
Total 100**%**

6. List of References

6.1. Course Notes

- Hard copy of Handouts.
- Electronic resources

6.2. Essential Books (Text Books)

"Social Scientific Thinking"

6.3. Recommended Books

None

6.4. Periodicals, Websites, ……etc

www.Wikepedia.com

7. Facilities Required for Teaching and Learning

- Data show
- Board and marker.

Course Coordinator: Dr. Maha A. Gharib

Head of Department : Assc. Prof. Dr. Amal Emad ELDin

Department Approval Date: September 2014