

Applied Pharmacokinetics

Course Name: Applied Pharmacokinetics	إسم المقرر: حركية الدواء التطبيقية
Course Code & No.: 416 PHP	رقم المقرر ورمزه: ٤١٦ مصد
Credits: 2(2+0+1)	:عدد الساعات 2(2+0+1)
Prerequisite: 336PHT	:المتطلب ٣٣٦صيد
Level: 9	:المستوى 9

Course Description (AIM):

This course introduces the student to principles of monitoring drug therapy for those involved in the interpretation of drug levels in a patient care setting. Pharmacokinetics of commonly used and low-therapeutic-index drugs are emphasized in this course.

Course Objectives

This course aims to introduce students to:

Concepts of Clinical Pharmacokinetics and Therapeutic Drug Monitoring (TDM)

Course learning outcomes:

Upon completing this course, the student will be able to:

1. Knowledge:

- a. Recognize disease states, conditions and drugs that alter pharmacokinetics of narrow therapeutic-index drugs such as (gentamicin, tobramycin, netilmicin, and amikacin, vancomycin, digoxin, lidocaine, procainamide, quinidine, carbamazepine, phenytoin, phenobarbital, valproic acid, cyclosporine, tacrolimus, theophylline, lithium) in a given patients.
- b. Define pharmacokinetics parameters such as volume of distribution, elimination rate constant, half-life, and clearance of narrow therapeutic-index drugs.

2. Cognitive skills:

- a. Utilize population-based pharmacokinetic parameters to calculate an appropriate initial dosage regimen for a given patient.
- b. Utilize patient specific pharmacokinetic parameters to alter an existing dosage regimen.
- c. Monitor patients for efficacy and toxicity using measured steady state concentrations of narrow therapeutic-index drugs.

3. Interpersonal Skills & Responsibility:

- a. Demonstrate ability to work as part of a team and to take responsibility towards self-learning.

4. Communication, Information Technology, Numerical

- a. Use basic mathematics skills in pharmacokinetic calculation.
- b. Effectively communicate results to the other care providers.
- c. Use computational tools such as Pharmacokinetics programme to calculate a dosage regimen for a given patient.

Course Contents:

Therapeutic drug monitoring of clinically used drugs:

- Aminoglycosides
- Vancomycin
- Digoxin
- Theophylline
- Lidocaine
- Procainamide
- Quinidine
- Phenytoin
- Carbamazepine
- Valproic acid

- Phenobarbital
- Cyclosporine
- Tacrolimus (FK506)
- Lithium
- Computer programs in Therapeutic drug monitoring

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	28	14	-	-	-	42 hours

The following teaching strategies are used:

Team Based Learning (TBL)

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Individual readiness assessment test (IRAT)	15%
2	Group readiness assessment test (GRAT)	20%
3	Mid-term I exam	15%
4	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB
4	Outcome 4	W, PB

W: Written **PB: Performance-Based** **AP: Assignment Project** **P: Portfolio**
Learning resources

1. List Required Textbooks Larry A. Bauer. Applied Clinical Pharmacokinetics. (2008). McGraw-Hill/Appleton & Lange
2. List Essential References Materials (Journals, Reports, etc.) Clinical Pharmacokinetics Journal
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) Malcolm Rowland, Thomas N. Tozer, Randy Rowland (Editors). Clinical Phannacokinetics:Concepts and Applications. 3rd edition (1995). Lippincott1

Williams & Wilkins.

William E. Evans, Jerome J. Schentag, William J. Jusko (Editors). Applied Phamacokinetics: Principles of Therapeutic Drug Monitoring. 3rd edition (1992). Applied Therapeutics.

Michael E. Winter. Basic Clinical Pharmacokinetics. 3rd edition (1994). Applied Therapeutics.

Joseph T. Dipiro, William J. Spruill, Robert A. Bloum, Jane M. Pruemer, American Cancer Society, (Joan Heimann editors). Concepts in Clinical Pharmacokinetics. 3rd. edition (2002). American Hospital Association

Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

Biostatistics

Course Name: Biostatistics	الإحصاء الحيوي	إسم المقرر:
Course Code & No.: 121PHP	١٢١ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: 135MATH	١٣٥ رياض	المتطلب:
Level: 2	2	المستوى:

Course Description (AIM):

This course is designed to provide students with a basic understanding of biostatistics. The course covers of descriptive statistics with concepts of dispersion, central tendency measurements. Graphical and tabular displays are also covered. Simple inferential statistics involving probability, sampling, confidence intervals and tests of significance are presented. Simple linear regression and correlations are also covered. Understanding concepts and rational for various methods are emphasized with use of computer statistical software (such as Excel, SPSS) for graphs and calculations.

Course objectives:

This course aims to introduce students to:

- Basic concepts and theoretical aspects in biostatistics
- Requirements and steps needed to perform descriptive and inferential statistics
- Important formulae used for descriptive and inferential statistics
- Common statistical tests used in data analyses
- Application of statistical concepts, theoretical aspects and formulae on some practical scenarios and cases provided as examples

Course learning outcomes:

Knowledge

Upon successful completion of this course, students will be able to:

- a. Describe the key features of health data.

Cognitive Skills

Upon successful completion of this course, students will be able to:

- a. Interpret mean, median, mode, ranges, variance, standard deviation and confidence intervals.

Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Demonstrate the data numerically and graphically using tables, histograms, scatter diagrams, pie chart and box plot.
- b. Calculate mean, median, mode, ranges, variance, standard deviation and confidence intervals.
- c. Perform statistical inference such as confidence intervals and tests of significance.
- d. Operate computer statistical software to carry out all the calculations

Course Contents:

- Basic concepts
 - Definitions-, statistics, biostatistics, data
 - Definitions-variables (discrete and continuous).

- Descriptive statistics
 - Preliminary data analysis
 - Measures of central tendency (mean, median, mode).
 - Measures of dispersions - range, mean deviation, variance, and standard deviation.
 - Graphical representation of data - dot plot, box plot, bar diagrams, and histograms.
 - Frequency of distributions.
 - Skewness, Kurtosis.
 - Distributions and Probability

- Definitions, conditional probability
 - Discrete and continuous probability distributions
 - Bernoulli, Binomial, Normal and Poisson distributions.
 - Elementary sampling and sampling distributions.
- Inferential statistics
 - Estimation of unknown parameters.
 - Test of hypothesis and significance
 - Comparing two means.
 - Comparing two proportions.
 - Simple Linear Regression and Correlations.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	28	-	-	-	-	28 hours

The following teaching strategies are used:

- Lectures

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	20%
2	Midterm 2 exam	20%
3	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB, AP

W: Written PB: Performance-Based AP: Assignment Project P: Portfolio

Required Textbooks

- Wayne Daniel. (2010). Biostatistics: Basic concepts and methodology for the Health Sciences (9th edition). John Wiley & Sons, Inc
- Wayne Daniel. (1999). Biostatistics: a foundation for analysis in the health sciences (7th edition). New York, Singapore, Toronto: John Wiley & Sons, Inc.
- Bernard Rosner. Fundamentals of Biostatistics.

Casebooks:

Recommended Textbooks and Reference Material

- Glaser, A.N. (2001). High- yield biostatistics. Philadelphia, Baltimore, New York, London, Buenos Aires, Hong Kong, Sydney, Tokyo: Lippincott Williams & Wilkins

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Clinical Communication Skills

Course Description:

Course Name: Clinical Communication Skills	مهارات التواصل الإكلينيكية	إسم المقرر:
Course Code & No.: 342 PHP	٣٤٢ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: None	بدون	المتطلب:
Level: 8	8	المستوى:

This course emphasize on specific tools and techniques for improving effective listening and responding skills in clinical communication with different communication styles with patients. Through interactive lectures, class discussions, simulation and role playing by students to apply clinical communication tools and strategies

Course Objectives:

This course aims to introduce students to

- Basic skills of clinical communication in patient centered care through verbal and non verbal communication of patients with good questioning, active listening and patient interviewing skills and removing of potential barriers for patient counseling to achieve the therapeutic outcome
- Attitudes, behavior and strategies to communicate effectively with different type of patients and tools to counsel patients beyond stereotyping and build rapport, improve quality of interpersonal relationships and overall healthcare team performance.
- Electronic method of communications.

Course Learning Outcomes:

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

Knowledge

Describe importance of communication in meeting patient care responsibilities.

State different barriers in communication skills

Summarize listening, responding and explaining skills in communication

Discuss effective communication skills with children, elderly, people with mental problems, low health literacy and with disabilities.

Cognitive skills

Apply motivational interviewing principles and strategies to improve patient compliance

Identify types of errors in communicating with healthcare providers and its potential solutions

Interpersonal skills and responsibility

Show interest in interviewing the patients using communication skills.

Communication, Information technology and numerical skills

Use of internet and email for interpersonal communication

Course Contents:

- Introduction to the basics of interpersonal communication.
- Tools and types of communication
- The basics of verbal & non - verbal cues. The questioning skills.
- The listening skills.
- The responding skills.
- The expressing & explaining skills.
- How to handle differences-conflict effectively.
- Gathering and presenting information.
- Rapport: How to strengthen it and how to respond when you lose it.
- Ten Common Errors - and how to avoid them - in communication, leadership and negotiation.
- Dealing with negative communication.
- The sender-receiver relationship.
- Effective meetings.
- Effective presentation skills.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	-	-	-	30 hours

The following teaching strategies are used:

- Lectures
- Class discussions

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid Term 1	15%
2	Mid Term 2	15%
3	Role Playing (Mock Pharmacy)	10%
4	Final Exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	W

Required Textbook Tindall WN, Beardsley RS, Kimberlin CL. Communication Skills in pharmacy practice. 4th. Edition, 2002. Lippincott Williams & Wilkins.
Electronic Materials Online resources available at: http://www.library.qu.edu.sa/Pages/default.aspx http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about http://accesspharmacy.mhmedical.com/ss/About.aspx http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx http://search.proquest.com/

W: Written **PB:**
Performance-Based
AP: Assignment Project
P: Portfolio

Clinical Nutrition and IV Admixture

Course Name: Clinical Nutrition& IV	إسم المقرر: التغذية العلاجية والمحاليل الوريدية
Course Code & No.: 423 PHP	رقم المقرر ٤٢٣ مصدر
Credits: 4(3+1+1)	عدد 4(3+1+1)
Prerequisite: 135MATH	:المتطلب ١٣٥ رياض
Level: 10	:المستوى 10

Course Description (AIM):

This course will cover principles of enteral & parenteral nutrition, Intravenous admixture and a septic technique.

Course Objectives

This course aims to introduce students to:

Principles of Enteral, & parenteral nutrition and Intravenous admixture & Aseptic techniques.

Course learning outcomes:

1. Knowledge

Upon successful completion of this course, students will be able to:

- Describe the nutrition care process, nutritional assessment strategies and normal nutritional requirements in adults and paediatrics, different routes, methods and concepts of clinical nutrition and the advantages, disadvantages and limitations of each route.
- Define the principles of aseptic technique, characteristics of IV admixture and its incompatibilities

2. Cognitive Skills

Upon successful completion of this course, students will be able to:

- Develop critical thinking skills to analyze patient data and interpret results in the nutritional need of the patient and identify and solve nutritional related problems
- Analyze nutritional status of individuals in various life-cycle stages and/or with nutrition-related chronic diseases by applying knowledge of metabolism and nutrient functions, food sources and physiologic systems.

3. Interpersonal Skills & Responsibility

Upon successful completion of this course, students will be able to:

- Demonstrate ability to work and use both verbal and written skills effectively when communicating with patients and health care professionals as well as peers during group discussion.

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Identify the nutritional need of individualized patients and calculate their nutritional requirement
- b. Calculate the problems associated with preparing I.V. admixtures.

5. Psychomotor

a. Perform aseptic procedure effectively

Course Contents:

- Nutrition assessment-Adults and Pediatrics
- Administration of specialized nutrition support
- Normal requirements-Adults and Pediatrics
- Access for administration of nutrition support Drug –Nutrient interactions
- Specific Guidelines for disease-Adults and pediatrics
- Administration of specialized nutrition support-issues unique to pediatrics.
- Aseptic technique
- IV admixture

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	42	14	28	-	-	84 hours

The following teaching strategies are used:

Lecture based

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	15%
2	Mid-term II exam	15%
3	Practical Exam (Mock Pharmacy)	20%
5	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB
4	Outcome 4	W, PB

W: Written

PB: Performance-Based

AP: Assignment

Project P: Portfolio

Learning Resources

<p>Required Textbooks</p> <ul style="list-style-type: none"> • Mary Anne Koda-Kimble¹ Lloyd Yee Young¹ Wayne A. Kradjan¹ B. Joseph Guglielmo. Applied Therapeutics. The Clinical Use of Drugs. 10th edition (2013). Lippincott Williams & Wilkins Publishers. • Guidelines for the use of parenteral and enteral nutrition in adults and pediatric patients, David August et al, 26(1), Jan-Feb 2002. • The Training Module for Intravenous Admixture Personnel (sixth edition) by Max L. Hunt et al
<p>Essential References Materials (Journals, Reports, etc.)</p> <p>Casebooks:</p> <ul style="list-style-type: none"> • Joseph T. Dipiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke¹ Barbara G. Wells, L. Michael Posey. Pharmacotherapy: A Pathophysiologic Approach. 5th edition (2002). McGrawHill/Appleton & Lange. • ADA Pocket Guide to Parenteral Nutrition by Pamela Charney PhD, RD, and Ainsley Malone MS, RD
<p>Recommended Textbooks and Reference Material (Journals, Reports, etc)</p> <ul style="list-style-type: none"> • The American Journal of Clinical Nutrition. • Clinical Nutrition Journal.
<p>Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)</p> <p>http://www.library.qu.edu.sa/Pages/default.aspx</p> <p>http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about</p>

Computers for Health Sciences

Course Name: Computers for Health Sciences	الحاسب الآلي للعلوم الصحية	إسم المقرر:
Course Code & No.: 216 PHP	٢١٦ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+1)	2(2+0+1)	المعتمدة: عدد الساعات
Prerequisite: 135 MATH	١٣٥ رياض	السابق: المتطلب
Level: 3	3	المستوى:

Course Description (AIM):

This course is designed to provide the student with knowledge about advanced computer technology and its application in the healthcare field. It will also introduce the student to technological innovations in healthcare informatics as a discipline, clinical decision-support systems, medical expert systems, telemedicine, telepharmacy and Internet health applications. The course will emphasize the use of computerized health information retrieval systems, the advanced features of the Internet information resources, patient-related programs and data manipulation software for application in profession -related tasks.

Course Objectives:

This course aims to introduce students to:

1. Computer technology and its applications in the healthcare field
2. Online search in medical, Pharmaceutical and other literature through the World Wide Web (WWW).
3. Technological advances in the healthcare and pharmaceutical field.

Course Learning Outcomes:

Upon successful completion of this course, students will be able to:

1. Knowledge

Recognize the advanced computer technology and its application in the healthcare field

Describe the online resources and perform online search in medical, Pharmaceutical and other literature through internet

Communication, Information Technology, Numerical

- Demonstrate effective communication skills using various modes of professional communication options available through internet in health care settings

Course Contents:

- Review of major software packages used in biomedical computing:
- Types of Software packages and their use in healthcare.
- Choosing and evaluating biomedical software.
- Use of Microsoft Office programs to create:
- Patient education materials (Brochures, pamphlets, etc)
- A presentation about one drug or disease.
- Create a health information website.
- Graphical representation of data:
- The use of plotting software (one or more of the following software can be used for this purpose):
- Stanford Graphics
- Sigma Plot
- Graph Pad Prism
- Other free plotting software online.
- The use of chemistry structure drawing software (one or more of the following software can be used for this purpose):
- ACDI ChemSketch
- CambridgeSoft ChemDraw
- Chemistry 3D Draw
- MDLISIS
- Substructure searchable chemical database software
- Statistical Analysis, data mining and questionnaires analysis: (one or more of the following software can be used for this purpose):
- SPSS (must be used)
- SAS
- Systat
- S-Plus
- Microsoft Excel

- Simple Healthcare programs:
- Drug Interactions software
- Total Parenteral Nutrition (PN)
- Pharmacokinetic modeling
- Inventory Control
- The Internet (advanced usage):
- Internet resources:
- Internet terminology.
- Educational resources on the Internet
- Medical, pharmaceutical and dental resources on the Internet
- Free Medical textbooks (Merck Manual, Clinical Pharmacology, etc.)
- Communication:
- Professional communication:
- E-mail, mailing lists, newsgroups.
- Health-related Discussion groups and forums.
- Inter-professional communication:
- Intranet
- Telemedicine and telepharmacy
- Health Websites:
- PubMed
- Medscape
- Health Information Retrieval and Digital Libraries
- Indexing and abstracting services.
- Factual databases.
- Information Retrieval
- Knowledge-based Information
- Retrieval
- Evaluation
- Digital Libraries
- Computerized Literature Search:
- MEDLINE Search:
- Major MEDLINE sites
- Search Strategies.
- Journals online.

- Cybernetics, Medical informatics and pharmacoinformatics:
- Artificial Intelligence (AI) programs (theory only).
- Examples of such programs: MYCIN, ONCOCIN, etc.
- Medical Expert Systems (MES) (theory and demonstration only).
- Clinical Decision Support Systems (CDSS): CDSS Examples, Explain (demo)
- Clinical simulations (demonstrations)
- Experimental technologies, such as virtual reality systems (demonstrations)
- Electronic patient record
- Medical Imaging (Theory only + field visit + presentations)
- Ultrasound
- Radiology
- CT Scan
- Healthcare financial systems
- MediSoft
- Practisoft
- Students' Presentations on selected topics of the course.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	15	-	-	-	45 hours

The following teaching strategies are used:

- Lectures

Tutorials

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	20%
2	Mid-term II exam	20%
3	Final exam	60%

Course Outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	W

W : Written PB: Performance Based AP: Assignment Project P: Portfolio

Required Textbooks

- Van Bemmel JH, Musen MA (editors). Handbook of Medical Informatics. 1997 Heidelberg, Germany. Springer. [Portions of the Handbook are available on the website at <http://www.mihandbook.stanford.edu/handbook/home.html>]

Additional suggested readings:

Shortliffe EH, Fagan LM, Wiederhold G, Perreault LE. Medical Informatics: Computer applications in healthcare and biomedicine. 2000. Springer Verlag ISBN: 0387984720.

Davis MW. Computerizing healthcare information. 1St. edition. 1998. McGraw-Hill Publishing Co. ISBN: 0070159467.

Casebooks:

None

Recommended Textbooks and Reference Material

Degoulet P, Fieschi M. Introduction to Clinical Informatics, 1997. ISBN: 0387946411

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Dispensing of Medications

Course Description (AIM):

Course Name: Dispensing of Medications	اسم المقرر:	تجهيز الوصفات الصيدلانية
Course Code & No.: 337 PHT	رقم المقرر ورمزه:	صيد ٣٣٧
Credits: 3(2+1+0)	المعمدة:: عدد الساعات	3(2+1+0)
Prerequisite: 323PHT	:المتطلب	صيد٣٢٣
Level: 7	:المستوى	7

In this course, students will apply previously acquired knowledge to the practice of dispensing medications. Comparative evaluation of commonly prescribed and some non-prescribed drugs will be discussed. Different criteria used for selection of drugs and pharmaceutical products will be emphasized. Drug interactions and prescriptions for different groups of patients will be discussed.

Course objectives:

1. Knowledge of medical prescription, drug interactions and drug dispensing in different types of patients.
2. Criteria used for selection of drugs and pharmaceutical products and appropriate recommendations on the use of commonly prescribed pharmaceutical products.
3. How to process prescriptions and dispense medications
4. How to perform calculations in dispensing of medication.

Learning outcomes

1. Knowledge

Upon successful completion of this course, students will be able to:

- a. Define different types of drug interactions.
- b. List the prescription abbreviations, error-prone abbreviations, Symbols, and Dose Designations.
- c. Outline the appropriate procedure used in dispensing prescribed pharmaceutical products.
- d. Describe the appropriate extemporaneous compounding of Rifampin suspension as a prescribed preparations.

2. Cognitive Skills

Upon successful completion of this course, students will be able to:

- a. Convert the units of Metric System from one to another (e.g. grams to kilograms or vice versa)
- b. Demonstrate the appropriate procedure used for dispensing prescribed pharmaceutical products including controlled medications
- c. Perform the extemporaneous compounding of prescribed medication.
- d. Familiarity with unit dose system
- e. Demonstrate the techniques to use various Inhalers (metered dose inhaler, dry powder inhaler), Insulin pens, aero chambers, skin patches.
- f. Identify medication errors (prescription errors and dispensing errors).
- g. Labelling the prescribed product and learn the use of various auxiliary labels for different prescribed products.
- h. Preparing, handling, reading, reviewing and understanding the prescriptions

3. Interpersonal Skills & Responsibility

Upon successful completion of this course, students will be able to:

- a. Evaluate the components of medical prescription

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Demonstrate communication skills in patient counselling on how to use medications appropriately.

Course Contents:

1. Apply previously taught knowledge in the practice of dispensing.
2. Reviewing, Understanding and Evaluating Prescription and Medication orders
3. Processing Prescriptions and Patient Counseling
4. Identify Drug interactions (Drug-Drug, Drug-Food)
5. Learn the different criteria used for selection of drugs and pharmaceutical products.
6. Controlled Medication prescriptions and dispensing
7. Comparative study between prescription of various age groups (Pediatrics, Geriatrics, Pregnancy and Breast Feeding)
8. Identify medication errors (prescription errors and dispensing errors)

9. Learn how to provide the appropriate recommendations on the use of commonly prescribed drugs.
10. Learn how to provide the appropriate recommendations on the use of some non-prescription pharmaceutical products.
11. Appreciate the differences between normal adults and some other groups of patients (e.g. pediatrics) and learn the basic knowledge of prescriptions for such groups.
12. Learn the basic knowledge of pharmacokinetic drug interactions and be able to detect drug interactions in medical prescriptions.
13. Learn how to perform the appropriate extemporaneous compounding of selected commonly prescribed preparations.

Teaching/learning methods and Contact Hours

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	25 hours			18		43
Credit	3					45

The following teaching strategies are used:

Team Based Learning (TBL)

- Lectures
- Practical

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term 1 exam	15%
2	Mid-term 2 exam	15%
3	Practical Exam (Mock Pharmacy)	20%
4	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	PB

W: Written

PB: Performance-Based

AP: Assignment Project

P: Portfolio

<p>1. List Required Textbooks</p> <ul style="list-style-type: none"> - Remington: The Science and Practice of Pharmacy / Edition 21 by Lippincott Williams & Wilkins. - L. Shargel, A. Mutnick, L. Swanson. Comprehensive Pharmacy Review.
<p>2. List Essential References Materials (Journals, Reports, etc.)</p> <ul style="list-style-type: none"> - American Hospital Formulary Service Drug Information. Latest Edition. American Society of Health System. - The Pharmaceutical Press. W. Lund.
<p>3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)</p> <ul style="list-style-type: none"> - Remington: The Science and Practice of Pharmacy / Edition 21 by Lippincott Williams & Wilkins - Comprehensive Pharmacy Review by Leon Shargel PhD RPh, Alan H. - Drug Facts and Comparisons, Latest Edition, Facts and Comparison. - Facts and Comparison Drug Interactions, Latest Edition, Facts and Comparison. A.R. Gennaro, ed., Remington. The Science and Practice of Pharmacy, Latest edition. Mack Publishing Co. - American Hospital Formulary Service Drug Information. Latest Edition. American Society of Health System. - The Pharmaceutical Codex: Principles and Practice of Pharmaceutics. Latest Edition. Rittenhouse Book Distributors. - Handbook of Non-prescription Drug. Latest Edition. American Pharmaceutical Association.
<p>List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)</p> <p>http://www.library.qu.edu.sa/Pages/default.aspx</p> <p>http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about</p> <p>http://accesspharmacy.mhmedical.com/ss/About.aspx</p> <p>http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx</p> <p>http://search.proquest.com/</p>
<p>5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p> <p>Medscape application</p>

Drug and Poison Information Services and literature evaluation

Course Name: Drug and Poison Information Services and literature evaluation	خدمات معلومات الأدوية والسموم وتقويم الدراسات	إسم المقرر:
Course Code & No.: 343 PHP	٣٤٣ مصد	رقم المقرر ورمزه:
Credits: 3(2+1+1)	3(2+1+1)	عدد الساعات:
Prerequisite: 216PHP	٢١٦ مصد	المتطلب:
Level: 8	8	المستوى:

Course Description (AIM):

The theoretical part is designed to introduce the students to the concept of drug Information, functions, and how to establish drug information centers. In addition this part will expose the students to the theoretical background required to locate, evaluate and communicate drug information using mainly secondary and tertiary resources. In this case the student will be taught types of literatures, classification of requests, and how to prepare, formulate, and communicate an answer.

In the practical part, the students will also be exposed to the various types of drug and poison information requests, and be involved in preparation of written response to each using the official request form used by the center. In addition, the student will learn how to write drug monograph. Furthermore the student will be taught and exposed to the various types of secondary and tertiary resources and to the searching technique required for each type.

Course objectives:

This course aims to introduce students to:

- Drug & poison information services and profession and their roles and responsibilities
- Skills, knowledge and facilities required to carry on services and perform tasks
- Standards, ethics and quality requirements needed for offering drug and poison information services and for the professionals
- Varieties and options in providing drug and poison information services
- Application of basic concepts and principles on some practical scenarios and cases provided as examples

Course learning outcomes:

1. Knowledge

Upon successful completion of this course, students will be able to:

- a. Define the principle of drug and poison information center**
- b. Describe the role of a pharmacist as drug information provider**
- c. Describe the required processes and materials to establish drug Information center or service**

2. Cognitive Skills

Upon successful completion of this course, students will be able to:

- a. Differentiate between primary, secondary and tertiary literature that are usually used in answering drug and poison information request.**
- b. Recognize various types of requests and the required background information that should be extracted for each type of question**

3. Interpersonal Skills & Responsibility

- a. Show effective self-management in term of time, planning, motivation and personal initiative while dealing with drug and poison information calls**
- b. Show keeping up-to-date and development of the profession and the ability to adapt to changes in a professional environment**

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Formulate written drug information response for each type of request**
- b. Conduct search in various secondary resources**
- c. Prepare drug monographs as a part of the student experience in conducting drug and poison information services**

Course Contents:

- Introduction to the concept of drug and poison information services
- Functions of drug and poison Information centers
- How to establish drug and poison information center
- Types of biomedical literature:
 - Primary

- Secondary
- Tertiary
- Classification of requests and the background information required.
- Preparation and formulation of response
- Communication of response
- How to prepare drug monographs, abstracts, and drug use evaluation (DUE) reports

Practical:

- Evaluating and using various types of tertiary literatures.
- Handling the various types of requests
- Preparing drug monographs, writing drug information in newsletters
- Searching secondary literature Including IDIS (IOWA system), MICROMEDEX, Medline, and Internet.
- Communicating responses to drug and poison information requests verbally and in a written format.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	28	14	-	28	-	70 hours

The following teaching strategies are used:

- Oral presentation
- TBL
- Group discussions

Case presentations

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	5%
4	Mid-term I exam	15%
3	Mid-term II exam	15%
4	Assignment	5%
5	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB, AP
4	Outcome 4	W, AP

W: Written PB: Performance-Based AP: Assignment Project P: Portfolio

Required Textbooks

- Patrick M. Malone (Editor), Kristen W. Mosdell, Karen Kier, John Stanovich. Drug Information: A Guide for Pharmacists. 2nd. edition (2000). McGraw-Hill/Appleton & Lange.

Casebooks:

Recommended Textbooks and Reference Material

- Ascione, F.J., Manifold, C.C., Parenti, M.A. (1997). Principles of drug information and scientific literature evaluation. Washington, D.C.: American Pharmaceutical Association
- Robson, A.S., Bawden, D., Judd, A.(2001). Pharmaceutical and medicines information management: principles and practice. Edinburgh, London, New York, Philadelphia, St Louis, Sydney, Toronto: Churchill Livingstone.
- Winfield, A.J. & Richards, R.M.E. (2004). Pharmaceutical practice, 3rd edition. Edinburgh, London, New York, Oxford, Philadelphia, St Louis, Sydney, Toronto: Churchill Livingstone

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Ethics in Pharmacy

Course Name: Ethics in Pharmacy	أخلاقيات الصيدلة	إسم المقرر:
Course Code & No.: 341 PHP	٣٤١ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	المعمدة: عدد الساعات
Prerequisite: 102 IC	١٠٢ سلم	المتطلب:
Level: 8	8	المستوى:

Course Description:

This course introduces the basic principles of professional ethics to the students pertaining to healthcare in general and pharmacy practice in particular. This course makes the pharmacists to use their ethical knowledge and skills for the benefit of patients and other healthcare providers to be just and fair in their services to the public.

Course Objectives:

This course aims to introduce students to:

- Basic principles of professional ethics in pharmacy practice and ethical requirements in preserving patient's rights, confidentiality and autonomy and taking decisions for their benefit.
- Ethical requirements and criteria in community pharmacy, research, therapeutic drug selection and interchange, drug promotion and use of drugs in sports
- Ethical cases and pharmacist's decision based on professional ethical values.

Course Learning outcomes

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

1. Knowledge

- Describe basic ethical principles, theories and liabilities and practices in pharmacy profession
- Discuss patient's quality of life issues, their confidentiality, autonomy and rights
- Define ethics in community pharmacy and research

Cognitive skills

- Classify different criteria for ethical therapeutic drug selection and interchange

- Assess ethical cases of contraception and abortion
- Distinguish between ethical cases of euthanasia and mercy killings

Course Contents:

- Ethics and Pharmacy Law and other Drug Acts in Saudi Arabia - Legislative positions on ethical issues.
- The concept of the pharmacy profession.
- Ethical theories.
- Bioethical principles. Conflict of interest.
- Patient's quality of life and Patients' rights (prejudice, stereotyping, and racism).
- Patient confidentiality and autonomy.
- Codes of ethics:
- Code of Ethics for Pharmacists - American Pharmaceutical Association (APhA).
- Code of Ethics - American Association of Pharmaceutical Scientists (MPS).
- Ethics in the community pharmacy.
- A pharmacist's liabilities.
- Commercialism In the pharmacy field.
- Drugs and sport - The role of the pharmacist.
- Therapeutic Drug product selection, interchange and substitution.
- Ethics in research.
- World Health Organization (WHO) criteria for drug promotion.
- Ethics Cases (contraception and abortion)
- Ethic Cases (euthanasia - assisted and mercy killings).

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	-	-	-	30 hours

The following teaching strategies are used:

- Lectures
- Class discussions

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid Term 1	20%
2	Mid Term 2	20%
3	Final Exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	W

W: Written

PB: Performance-Based

AP: Assignment Project

P: Portfolio

Required Textbook

Ethics In Pharmacy Practice by Hisham S Abou Auda, 2004. King Saud University.

Recommended Books

- Ethics in pharmacy practice by Remington's Pharmaceutical Sciences. (20th. edition). Genarro A. editor. Easton, PA. 2000. ISBN: 0683306472.
- Buerki RA, Vottero LD, Ethical responsibility in pharmacy practice. 2nd. edition. 2002
- Smith M, Strauss S, Baldwin HJ, Alberts Kr. (editors). Pharmacy Ethics. 1991. Pharmaceutical Products Press. New York, NY. IS BN: 1560241721

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Evidence Based Pharmacy

Course Name: Evidence-Based Pharmacy	إسم المقرر: الصيدلة المبنية على البراهين
Course Code & No.: 413 PHP	رقم المقرر ورمزه: ٤١٣ مصد
Credits: 2(1+1+0)	عدد الساعات: 2(1+1+0)
Prerequisite: 343PHP	المتطلب: ٣٤٣ مصد
Level: 9	المستوى: 9

Course Description (AIM):

The course is designed to provide the understanding of the concept and skills required to practice evidence--based pharmacy (EBP) and pharmacotherapy. Hand-on-experience will include use of evidence--based databases, critical appraisal and how to calculate and interpret statistical indicators used in pharmaceutical and medical literature.

Course Objectives:

This course aims to introduce students to:

- Clinical skill necessary to formulate a focused clinical question.
- Necessary skills to perform critical appraisal and determine the appropriateness of various biostatistical analyses.
- How to develop a practice guideline for the best use of medicine.
- The principle of the evaluation criteria on how to add a new medicine in the hospital drug formulary

Learning outcomes:

Upon successful completion of this course, students will be able to:

1. Knowledge

- Recognize the basic concept of evidence-based pharmacy and pharmacotherapy.
- Recognize how to use evidence-based pharmacy and pharmacotherapy in the activity of Pharmacy and Therapeutic (P&T) committee

2. Cognitive Skills

- Explain how to use evidence-based pharmacy and pharmacotherapy data-bases (e.g. Medline, Cochrane Library, etc.) in searching for the evidence.
 - Develop practice guidelines for drug therapy and rational drug use
3. **Interpersonal skills and responsibility**
- Evaluate and rephrase issues arising in patient care as correct clinical questions (PICO questions)
4. **Communication, Information technology and numerical skills**
- Demonstrate an effective communication skills with drug representative and other health professionals to improve the best use of medicine, patient safety and quality of care.

Course Contents:

- Evidence--based pharmacy: concepts and principles
- Evidence--based databases
- Asking answerable clinical questions
- How to find current best evidence
- Evaluating literatures on pharmaceutical products information
- How to evaluate pharmaceutical and medical literature on drug therapy
- Appraising pharmaceutical and medical literature on medical interventions
- Use of Evidence--based pharmacy principles to develop practice guidelines
- Evidence-based Pharmacy and Pharmacy and Therapeutic (P&T) committee.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	۳۰	15	-	-	-	45 hours

The following teaching strategies are used:

- Lectures
- Oral/report presentations

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid Term 1 exam	15%
2	Mid Term 2 exam	15%
3	Presentation	5%
4	Report	15%
5	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W, AP
4	Outcome 4	W

W: Written

PB: Performance-Based

AP: Assignment Project

P: Portfolio

Required Textbook

1. Christine Bond (Editor). Evidence-Based Pharmacy. 1st edition (2000). Pharmaceutical Press.
2. David L. Sackett¹ Sharon E. Straus, W. Scott Richardson¹ William Rosenberg, R. Brian Haynes, Evidence-Based Medicine: How to Practice and Teach EBM. 2nd edition (2000). Wolfe Pub Ltd

Recommended Textbook

Martin Dawes (Editor), Alastair M. Gray, Philip T. Davies. Evidence-Based Practice: A Primer for Health Care Professionals. (December 1999). Churchill Livingstone

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Graduation Project

Course Name: Graduation Project	مشروع تخرج	إسم المقرر:
Course Code & No.: 425 PHP	٤٢٥ مصد	رقم المقرر ورمزه:
Credits: 2(1+1+0)	2(1+1+0)	عدد الساعات
Prerequisite: 343PHP	٣٤٣ مصد	المتطلب:

Course Description (AIM):

Topics will include research design, data collection, analysis, and interpretation and formulation of research results and describe their process in oral session presentation.

Objectives:

The course aims to:

- Provide an opportunity for students to work on projects of variable scope.
- Introduce students to the method used to conduct research and to provide them with the opportunity to give a formal presentation on the final project report.

Learning Outcomes:

Upon successful completion of this course students will be able to:

- Reproduce the knowledge as to how to write Research Proposals and Report.
- Develop scientific knowledge and skills to collect scientific data in their research project and to analyse and interpret the data
- Develop qualities of team player and learning from others while working in a research project as a team.
- Demonstrate effective presentation skills by presenting the report of their research projects in front of fellow students and faculty members.
- Perform effective psychomotor skills in laboratory and technical tasks during the execution of their research projects.

Course Contents:

- Meetings with advisor to select projects

- Research planning
- Research conduction
- Project presentation
- Project report

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	5	-	30	-	10	45 hours

The following teaching strategies are used:

- Lectures
- Project & Presentation

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Continuous Evaluation	20%
2	Proposal & Report	20%
3	Presentation & Final Evaluation	60%

Course Outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	PB
2	Outcome 2	AP
3	Outcome 3	AP

W : Written PB: Performance Based AP: Assignment Project P: Portfolio

Required Textbooks NONE
Casebooks: None
Recommended Textbooks and Reference Material Pub Med
Electronic Materials Online resources available at: http://www.library.qu.edu.sa/Pages/default.aspx http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about http://accesspharmacy.mhmedical.com/ss/About.aspx http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx http://search.proquest.com/

Introduction to Pharmacy Profession

Course Name: Introduction to Pharmacy Profession	المدخل إلى مهنة الصيدلة	إسم المقرر:
Course Code & No.: 120 PHP	١٢٠ مصد	رقم المقرر ورمزه:
Credits: 1(1+0+0)	1(1+0+0)	عدد الساعات:
Prerequisite: None	بدون	المتطلب:
Level: 2	2	المستوى:

Course Description:

This course is designed to provide students with a broad perspective on pharmacy as a profession in a changing health care environment. Students will learn to think critically about health and health care from the patient's perspective and about the historical and philosophical contexts of the profession as it continues to evolve toward patient focused care.

Course Objectives:

This course aims to introduce students to:

- Role of the pharmacist and the new dimensions of different pharmacy practice settings in Saudi Arabia.
- Dosage forms of pharmaceuticals, route of administration of drug delivery and prescription and medication order interpretation
- Importance of quality assurance of pharmaceutical care and information about the different drug resources, professional ethics and communication

Learning outcomes:

Upon successful completion of this course, students will be able to:

Knowledge

- Define the role of the pharmacy practitioner and different field of pharmacy practice in Saudi Arabia
- Describe the basic principles of drug developments, medication dosage forms and their advantages and disadvantages

- List different medical terminologies, abbreviations and their meanings.
- Outline different sources of medication information
- Discuss the basic principles of Pharmaceutical care and professional ethics and communication.

Course Contents:

- Pharmacy: history and philosophy
- The health care system and financial aspects of health care
- Overview of pharmacy practice
- Key pharmaceutical care concepts and drug related problems
- Pharmacy settings and functions
- Roles and duties of pharmacists
- Medication dosage forms, routes of administration and drug delivery systems
- Introduction to quality assurance concepts
- Prescription and medication order terminology and abbreviations
- Prescription and medication order interpretation
- Drug development
- Pharmacy Information sources
- Pharmacy organizations
- Pharmacy laws and professional ethics
- Professionalism and communication

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	15	-	-	-	-	15 hours

The following teaching strategies are used:

- Lectures
- Class discussions

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid Term 1	20%
2	Mid Term 2	20%
3	Final Exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	W

W: Written

Required Textbook

1. Pharmacy : an introduction to profession by L. Michael Posey, 2nd Edition
2. Foundation in Pharmacy Practice by Ben Whalley
3. Developing Pharmacy Practice (a focus on patient care) Handbook 2006 Edition

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Mathematics for Pharmacy

Course Description (AIM):

Course Name: Mathematics for Pharmacy	الرياضيات للصيدلة	إسم المقرر:
Course Code & No.: 135 MATH	١٣٥ رياض	رقم المقرر ورمزه:
Credits: 3(2+0+1)	3(2+0+1)	عدد الساعات:
Prerequisite: None	بدون	المتطلب:
Level: 1	1	المستوى:

This course is designed to provide calculus for students of pharmacy who intend to apply these concepts in their professional course work. Students are expected to develop an understanding of the derivative as an instantaneous rate of change and use this definition to find derivatives of many types of functions and combinations of these functions including algebraic, trigonometric, exponential and logarithmic functions. Then they are expected to compute the maxima and minima of some functions and plot them as well. They also will develop the idea that integration is the inverse operation to differentiation and will be able to familiar with the integration techniques. Students are also exposed to linear first-order differential equations and their applications in health sciences.

Objectives:

Upon successful completion of this course, students will be able to:

- Show understanding of the basic principles of calculus.
- Gain an understanding of basic single-variable calculus and its applications including functions, limits, differentiation, Integration and differential equations and their applications.
- Be exposed to the properties of exponential functions and inverse functions and logarithms.
- Show understanding of the integration of various functions including algebraic, trigonometric, exponential and inverse functions.
- Show understanding of the application of derivatives in analysis of curves and evaluating maxima and minima.
- Show understanding of the various techniques of integration including integration by substitution, partial fractions, integrating factor and integration by parts.

- Apply the fundamental theorem of calculus to evaluate definite integrals.
- Be familiar with separable linear first-order differential equations and their solution by finding the antiderivative.

Course Contents:

- Real Numbers.
 - Functions:
 - Definition
 - Properties
 - Types of functions
 - Trigonometric functions
 - Slopes of linear functions
 - Increments and rates
 - Limits
 - Continuity
- Derivative
 - Definition
 - Rules of derivative
 - Higher order derivatives
- Applications of derivatives
 - Analysis of curves
 - Maxima and minima and their applications
 - Monotone functions
 - Convexity and concavity
 - Plotting of functions
- Exponential and Logarithmic Functions
 - Exponential function
 - Logarithmic functions
 - Linear semi-log, and log plots
 - Linearization of nonlinear plots
 - Natural logarithms and exponents

- Exponential growth and decay
- Integration
 - Antiderivatives
 - Integration techniques:
 - Integration by substitution
 - Integration of logarithmic and exponential functions
 - Integration by parts
 - Integrating factor
 - Integration by partial fractions
 - The definite Integral
 - Polar coordinates
 - Areas
 - Volumes
- Differential Equations:
 - Separable equations
 - Linear first-order equations

Evaluation methods:

40 (2 Midterm exams)

60 final exam

Text Book(s):

Arya JC, Lardner RW. Mathematics for the Biological Sciences. Prentice-Hall ISBN: 0-13-562439-8.

Hughes-Hallet. Calculus: Answer Book. 1994. John Wiley & Sons Inc. 1st. edition. ISBN: 0-47-111305-0

Additional suggested readings:

Fleming W. App fled Calculus for Management, Social, and Life Sciences. 1991. Prentice Hall. ISBN:0-13-39769-5.

Medical Terminology

Course Name: Medical Terminology	المصطلحات الطبية	إسم المقرر:
Course Code & No.: 102 PHP	١٠٢ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: None	بدون	المتطلب:
Level: 1	1	المستوى:

Course Description (AIM):

Medical Terminology is a specialized language for the health care team so that they may communicate in concise and accurate way. The course introduces the most common & important terminology in the fields of pharmacy, medicine and dentistry based on the main disciplines. The course will be conducted in simple, easy & enjoyable interactive lectures. It is an integrated course that will be shared by the colleges of medicine, dentistry and majors of pharmacy.

Objectives:

Upon successful completion of this course, students will be able to:

- Understand the common biomedical terminology in simplified English.
- Show knowledge of word roots, combining forms, prefixes and suffixes related to each system studied.
- Understand words associated with anatomical structures, and pathological processes of common diseases.
- Break down and build pharmaceutical, medical & dental terms according to word parts and descriptions.
- Define directional terms associated with body topography.
- Identify selected common medical abbreviations and symbols used by pharmacy, medical and dental specialties.

Course Contents:

- Introduction to written & spoken language of Pharmacy -with emphasis on subdivisions-, medicine and dentistry.
 - The root of words associated with medical terminology such as diseases, organs, systems.
 - The prefixes and suffixes of various medical, dental and pharmacy terms.
 - The Differentiation between spelling and pronunciation of related terms.
- The spelling and definition of medical terminology associated with various body systems including: nervous

(autonomic and CNS), musculoskeletal, cardiovascular and lymphatic, digestive, urinary, respiratory, reproductive, and endocrine.

- Pharmaceutical Terminology related to Clinical Pharmacy and Therapeutics.
- Pharmaceutical Terminology related to medicinal chemistry and Formulations.
- Pharmaceutical Terminology related to Pharmacognosy.
- Pharmaceutical Terminology related to Pharmacology and Toxicology.
- Pharmaceutical Terminology related to Pharmaceutics.

Evaluation methods:

2 Midterm exams (20 points each) = 40

Final Exam = 60 points

Text Book(s):

Willis MC. Medical Terminology: A programmed Learning Approach to the Language of Health Care. 1st. Edition, 2002. Lippincott Williams & Wilkins.

English for health professions. An elementary course for non-native speakers of English 1st. edition, 2001. Najd Commercial Printing Press.

Additional suggested readings:

Gyls BA and Wedding ME. Medical terminology: A Systems Approach 4th. Edition, April 1999. F A Davis Co.

Gyls BA and Masters RM. Medical terminology Simplified: A Programmed learning

2nd Approach by body Systems. 2nd. Edition, March 1998. F A Davis Co.

Cohen BJ. Medical Terminology: an illustrated Guide. 4th. Edition.

Over The Counter Drugs

Course Name: Over The Counter Drugs	الأدوية غير الوصفية	إسم المقرر:
Course Code & No.: 344PHT	صيد ٣٤٤	ورمزه::رقم المقرر
Credits: 2(2+0+0)	2(2+0+0)	المعتمدة::عدد الساعات
Prerequisite: 335 PHT	صيد ٣٣٥	:المتطلب
Level: 8	8	:المستوى

Course Description (AIM):

This course enables pharmacy students to follow health care practitioners, and consumers by making available comprehensive, convenient and easy-to-use compilation of information on nonprescription drugs and drug products. Students practice interviewing and counseling skills, and continue to develop their skills in over the counter drugs (OTC) counseling with new topics, including some alternative medicine. Emphasis will be placed on mechanism(s) of action of the various drug classes, body system(s) affected, clinical manifestations of problems and the resulting adverse effects.

Course Objectives

This course aims to introduce students to:

1. Acquire and demonstrate knowledge about over the counter drugs including legal requirement, drug classification, storage and the role of the pharmacist in the health information.
2. Role and action of non-prescription drugs including treatment, mechanism of action, dosage, side effects, and contraindications in selected minor ailments affecting gastrointestinal, eye, ear, dermatology, upper respiratory system in different type of patient.
3. Demonstrate responding to signs/symptoms and selection of non-prescription drugs for treatment and expected outcomes in selected minor ailments.

Course learning outcomes:

1. Knowledge

Upon successful completion of this course, students will be able to:

- a. Outline the pharmacist's role in management the over the counter medications and legal requirements. State how nonprescription medicines are supplied in accordance with legal and professional requirements.

- b. Describe the self-care movements
- c. Identify monitoring and referral criteria and explain the treatment choices for minor ailments include;with common gastrointestinal tract, upper respiratory system, skin, eye and ear minor ailments.

2. Cognitive Skills

Upon successful completion of this course, students will be able to:

- a. Select the appropriate nonprescription drug therapy for each patient
- b. Recognize the regulations govern the non-prescription medications.
- c. Apply monitoring and referral criteria and explain the treatment choices for minor ailments include;with common gastrointestinal tract, upper respiratory system, skin, eye and ear minor ailments
- d. Evaluate the appropriateness of nonprescription drug therapy, including the choice of the drug, Dosage, route, frequency, and duration of therapy in patient with common gastrointestinal tract, upper respiratory system, skin, Eye and ear minor ailments

3. Interpersonal Skills & Responsibility

Upon successful completion of this course, students will be able to:

- a. Illustrate the differences between generic and brand name of nonprescription drugs.

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Educate patients regarding nonprescription drugs that treat the following: common gastrointestinal tract, upper respiratory system, skin, and ear and eye minor ailments.

Course Contents:

- Introduction
- The self-care movements
- Patient Assessment and consultation
- The pharmacist's role
- The FDA's OTC review
- Drug classification
- Drug abuse
- OTC drug interactions
- Drug combinations
- Health information act
- Nutrition (special requirements)

- Nutrition(a health diet)
- Nutrition (obesity)
- Infant nutrition
- Eating disorders
- Internal supplement
- Total parenteral nutrition
- Products for Oral Cavity and Gastrointestinal Tract; digestion and related conditions
- Diarrhea and antidiarrheal agents
- Constipation and laxatives
- Hemorrhoidal and antihemorrhoidal products
- Oral hygiene; problems and products
- Upper respiratory tract infections and their symptoms products
- Common cold and allergy products
- Hay fever products for their alleviation
- Ophthalmic products and common eye problems and products for their relief
- Contact lens care solutions
- Otic products and common ear problems and products for their relief
- Pregnancy and Lactation; Pregnancy tests and products during pregnancy and lactation
- Contraceptives
- Skin Products; acne, dandruff, psoriasis, foot care and parasitic skin diseases

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	18		-	10	-	28 hours

The following teaching strategies are used:

Group Discussion

- Lectures

Individual presentations

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Poster presentation	5%
2	Mid-term I exam	15%
3	Mid-term II exam	15%
4	Practical (Mock Pharmacy)	5%
5	Final exam	60%

Course learning outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W, PB
2	Outcome 2	W, PB
3	Outcome 3	W, AP
4	Outcome 4	W, AP

W: Written

PB: Performance-Based

AP: Assignment Project

P: Portfolio

Required Textbooks

- Handbook of Non Prescription Drugs; American Pharmaceutical Association | The National Professional Society of Pharmacists, 2009.
- Comprehensive pharmacy review. SHARGEL, L. Philadelphia, Wolters Kluwer. Lippincott Williams & Wilkins, (2007).

Recommended Textbooks and Reference Material

- Pharmaceutics: the science of dosage form design. Aulton, Michael E.. Edinburgh ; New York: Churchill Livingstone, 2002.
- Goodman & Gilman's the pharmacological basis of therapeutics. GOODMAN, L. S., GILMAN, A., HARDMAN, J. G., GILMAN, A. G., & LIMBIRD, L. E. New York, McGraw-Hill, Health Professions Division (1996).
- Principles of Medical Pharmacology; H. Kalant, W.H.E. Roschlau and E.M. Sellers, University of Toronto Press, 1985.
- Clinical pharmacy and therapeutics. Walker, Roger, and Clive Edwards. Edinburgh: Churchill Livingstone, 2003.

Electronic

Online

resources

available

Materials

at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pathophysiology-I

Course Name: Pathophysiology-1	فسيولوجيا الأمراض-١	إسم المقرر:
Course Code & No.: 310 PHP	٣١٠ مصدر	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: 222 PHG	٢٢٢ دوي	المتطلب:
Level: 5	5	المستوى:

Course Description:

This course is designed to promote the understanding and application of fundamental disease processes in clinical settings, including etiology, pathogenesis, and clinical significance. The aim of the course is to teach students the pathogenesis of various symptoms and diseases affecting the human body. Altered physiological functions of human organs are explained on molecular, cellular, organ and systemic levels. The framework of this course is to represent the general concept of the diseases and basic pathophysiology of cardiovascular, hematopoietic, gastrointestinal and respiratory systems.

Objectives:

The following objectives will be covered

Pathogenesis of various symptoms and diseases affecting the human body.

Altered physiological functions of human organs are explained on molecular, cellular, organ and systemic levels.

The general concept of the diseases and basic pathophysiology of cardiovascular, hemopoietic, gastrointestinal and respiratory systems.

Learning Outcomes:

Upon the successful completion of this course, students will be able to gain KNOWLEDGE

- Discuss the etiology, pathogenesis, local and systemic effects of cell injury.

- Explain the phenomenon of inflammation and its relationship to disease process.
- Discuss the implication of different patterns of wound healing.
- Discuss the etiology, pathogenesis and clinical significance of selected disorders of the cardiovascular, hemopoietic, gastrointestinal and respiratory systems.

COGNITIVE SKILLS

- Distinguish the various types of cancer and their characteristic features.
- Understanding the concepts of selected diseases.

Course Contents:

- Introduction to pathophysiology
- General concepts of disease
- Cell injury: Etiology, pathogenesis of cell injury, adaptation, cell death, ischemia, necrosis and gangrene.
- Inflammation: Classification, causes, mediators of inflammation, signs of inflammation, consequences of inflammation, congestion, edema etiology, pathogenesis and complications.
- Tissue repair and regeneration: Healing by repair, scar formation and fibrosis.
- Neoplasia (Cancer): Classification, characteristic features of benign and malignant tumors, differentiation, carcinogenesis (molecular basis of cancer)
- Cardiovascular Disorders: Hypertension, atherosclerosis, ischemic heart disease, heart failure, cardiac arrhythmias, rheumatic heart disease, pulmonary edema, shock (cardiogenic, hemorrhagic, etc.)
- Hemopoietic Disorders: Anemia, leucocytosis, leucopenia, thrombocytopenia, thrombosis, embolism, leukemias, lymphomas, hemophilia.
- Gastrointestinal and Hepatobiliary Disorders: Peptic ulcer disease (PUD), gastro-esophageal reflux disease (GERD), nausea/vomiting, diarrhea, inflammatory bowel disease, jaundice, hepatitis, cirrhosis of liver,
- Respiratory disorders: Pulmonary tuberculosis, bronchial asthma, chronic bronchitis, chronic obstructive pulmonary disease (COPD), emphysema, bronchiectasis.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	-	-	-	30 hours

The following teaching strategies are used:

- Lecture/Class based

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid Term 1	20%
2	Mid Term 2	20%
3	Final Exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W

W: Written

Required Textbook

Text Book(s):

Price B. and Wilson L. Pathophysiology: Clinical Concepts of Disease Processes. 6th. edition, 2002. Mosby.

Zdanowicz MM. Essentials of Pathophysiology for Pharmacy. 2002. CRC Press.

Porth C. Pathophysiology. 9th. edition, 2014. Lippincott Williams & Wilkins,

Additional suggested readings:

Kumar P, Clark M. Clinical Medicine. 8th. edition, 2012. WB Saunders.

Forbes CD, Jackson WF. Color Atlas and Text of Clinical Medicine. 4th. edition, 2003. Elsevier Science.

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pathophysiology-II

Course Name: Pathophysiology-II	فسيولوجيا الأمراض-٢	إسم المقرر:
Course Code & No.: 322 PHP	مصد ٣٢٢	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: 310PHP	مصد ٣١٠	المتطلب:
Level: 6	6	المستوى:

Course Description:

This course is designed to build upon the concepts and principles taught in pathophysiology-I. This course includes the pathophysiological basis of electrolyte disturbances, calcium metabolic disorders, diseases of the endocrine, reproductive and central nervous systems.

Objectives: The following objectives will be covered

- The pathophysiological basis of selected electrolyte disturbances.
- The pathophysiological basis of selected calcium metabolic disorders.
- The pathophysiological basis of selected endocrine disorders.
- The pathophysiological basis of selected reproductive disorders.
- The pathophysiological basis of selected central nervous system disorders.
- The pathophysiological basis of selected connective tissue and musculo skeletal disorders.
- The pathophysiological basis of selected renal disorders.

Learning Outcomes:

Upon the successful completion of this course, students will be able to gain

KNOWLEDGE

- Discuss the etiology, pathogenesis and clinical significance of selected disorders of renal, reproductive, musculoskeletal and connective tissue.
- Determine the basic pathophysiological processes electrolyte disturbances, calcium metabolic disorders, diseases of endocrine system, diseases of reproductive system and central nervous system.
- Interpret the etiology, pathogenesis and clinical correlations to central nervous system disorders.

COGNITIVE SKILLS

- Analyze the relationship between normal physiology and pathological phenomena in endocrine disorders.
- Understanding the concepts of selected electrolyte, calcium metabolism, endocrine, reproductive, and central nervous system disorders.

Course Contents:

- Renal disorders: Fluid and electrolyte disturbances, urinary tract infections (UTI), urolithiasis (renal calculi), glomerulonephritis, nephrotic syndrome, renal failure, renal cell carcinoma.
- Endocrine disorders: Pituitary disorders (hypo and hyper secretions), thyroid disorders (hypo and hyper secretions), diabetes mellitus, adrenal gland disorders (Cushing’s syndrome)
- Calcium metabolism disorders: Osteoporosis, osteomalacia, musculoskeletal system and connective tissue disorders, rheumatoid arthritis, osteoarthritis, gout, systemic lupus erythromatosis.
- Central nervous system disorders: Epilepsy, migraine headaches, meningitis, parkinsonism.
- Reproductive Disorders: Infertility / sterility, dysmenorrhea, menorrhagia.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	-	-	-	30 hours

The following teaching strategies are used:

- Lectures/Class-based

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
2	Mid Term 1	20%
4	Mid Term 2	20%
5	Final Exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W

W: Written

Required Textbook

Text Book(s):

Price S. and Wilson L. Pathophysiology: Clinical Concepts of Disease Processes. 6th. edition, 2002. Mosby.

Zdanowicz MM. Essentials of Pathophysiology for Pharmacy. 2002. CRC Press.

Porth C. Pathophysiology. 9th. Edition, 2014. Lippincott Williams & Wilkins.

Additional suggested readings:

Kumar P, Clark M. Clinical Medicine. 8th. edition, 2012. WB Saunders.

Forbes C.D., Jackson W.F. Color Atlas and Text of Clinical Medicine. 3rd. edition, 2002. Elsevier Science

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Patient Assessment and First Aid

Course Name: Patient Assessment and First Aid	الفحص السريري والإسعاف الأولي	إسم المقرر:
Course Code & No.: 346 PHP	٣٤٦ مصد	رقم المقرر ورمزه:
Credits: 1(0+1+1)	1(0+1+1)	المعمدة::عدد الساعات
Prerequisite: 222PHG	٢٢٢دوي	:المتطلب
Level: 8	8	:المستوى

Course Description (AIM):

This course focuses mainly on patient assessment and development of medical skills within pharmacy practice. Also, it educates the students to collect physical examination data which play a limited role as compared with the information gathered through the health and medication history.

Course objectives:

This course aims to introduce students to:

- Assessment of common complaints that may be experienced in the delivery of pharmaceutical care
- Physical assessment techniques and tools necessary to monitor drug therapy
- Equipment and techniques necessary to conduct a physical examination
- Care of patients in remote environments, lacking typical health care facility resources for dealing with life-threatening situations and emergencies

Course learning outcomes:

1. Knowledge

Upon successful completion of this course, students will be able to:

- Learn the method of taking a basic medical history
- Record, in an appropriate format, the necessary patient information.
- Discuss the common medical problems presenting in primary health care setting at the hospital and community centers.
- Recognize the difference between quantitative and qualitative testing.
- Outline the clinical emergencies and basic lifesaving techniques.

- f. Identify risk factors for common diseases

2. Cognitive Skills

Upon successful completion of this course, students will be able to:

- a. Analyze symptoms and signs
- b. Construct a differential diagnosis for commonly presented patient complaints.
- c. Interpret the results of commonly used diagnostic procedures.
- d. Evaluate the significance of laboratory findings of common disease conditions
- e. Select certain laboratory parameters to monitor drug therapy and clinical outcomes.

3. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

Assess trust with the patient.

Illustrate to the patients the nature of his/her illness and therapeutic options

4. Psychomotor

- a. Demonstrate the methods of the treatment of life-threatening conditions
- b. Examine the different systems of the body

Course Contents:

- Patient interviewing & documentation
- General examination:
- General appearance
- Vital signs
- Heart and lung examination
- Abdominal examination
- Musculoskeletal examination
- Neurological and mental status examination
- Definitions and general concepts of laboratory data
- Electrolytes, minerals and trace elements homeostasis

- Arterial blood gases and acid-base balance Kidney function tests
- Liver and gastroenterology tests
- Pulmonary function tests
- Heart and myocardial infarction
- Metabolic disorders
- Hematology (red blood cells, white blood cells, coagulation tests)
- Infection diseases
- Rheumatic disorders and immunology testing

Practical:

- Physical examination of different organs of the body
- Introduction to first aid for all ages and all systems of the body, aims and priorities of first aid
- Management of the injured patient and shock
- Maintenance of airway passages and intravenous line
- Cardiovascular resuscitation
- Management of bleeding, open wounds, fractures, epilepsy, coma, sunstroke, animal bites, high grade fever, burns, poisoning, drowning, head injuries
- Emergency procedures at home, work, or leisure.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	15	15	15	-	-	45 hours

The following teaching strategies are used:

- Lecture/Class-based
- Presentations
- Problem solving
- Video
- Tutorials

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	10%
4	Mid-term I exam	15%
5	Objective Structured Clinical Exam (OSCE)	25%
6	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB, AP
4	Outcome 4	W, P, AP

W: Written

PB:

Performance-Based

AP: Assignment Project

P: Portfolio

Required Textbooks

- Rhonda M. Jones, Raylene M. Rospond, Lynn Walton Hall. Patient Assessment in Pharmacy Practice. (2003). Lippincott Williams & Wilkins Publishers.
- Scott L. Traub (Editor). Basic Skills in Interpreting Laboratory Data: Illustrated With Case Studies. 2nd. edition (1996). American Society of Health-System Pharmacists.
- First Aid Manual, St Andrews' Ambulance Association and the British Red Cross Society, St John Ambulance.

Casebooks:

Terry L. SchwInghammer¹ Joseph Dipiro, Robert Talbert, Gary Yee, Gary Matzke¹ Barbara G. Wells, L. Michael Posey (Editors). Pharmacotherapy Casebook. 5th edition (2002). McGrawHilvAppleton& Lange.

Recommended Textbooks and Reference Material

- Bickley, L.S. Bates' Guide to Physical Examination and History Taking. Philadelphia: J.B. Lippincott Williams & Wilkins.
- James Thomas, Tanya Monaghan. Oxford Handbook of Clinical Examination and Practical Skills. Oxford University Press.
- Kathleen DeskaPagana, Timothy James Pagana (Editors). Mosby's Manual of Diagnostic and Laboratory Tsss. 2nd. edition (2002). Mosby.
- Jarvis C. Physical Examination L Health Assessment: Lab Manual 4th. Edition, (2003). W B Saunders.

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pharmaceutical care

Course Name: Pharmaceutical Care	الرعاية الصيدلانية	إسم المقرر:
Course Code & No.: 414 PHP	٤١٤ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: 120 PHP	١٢٠ مصد	المتطلب:
Level: ٩	٩	المستوى:

Course Description (AIM)

To introduce students to the comprehensive process of pharmaceutical care including collection, organizing, maintaining and evaluation of patient's specific medical information. Each student must understand the professional practice of pharmaceutical care and its components, to be able to identify, resolve or prevent patient drug therapy problems, and to work with the patient and other healthcare providers to recommend effective solutions for those problems

Course objectives:

This course aims to introduce students to:

- Knowledge necessary to provide pharmaceutical care to patients
- Skills necessary to work in team-based practices
- Philosophies that underline pharmaceutical care
- The meaning of pharmaceutical care
- An overview of patient information assessment

Course learning Outcomes

1. Knowledge

Upon successful completion of this course, students will be able to:

- a. Define pharmaceutical care
- b. List the main steps in the pharmaceutical care process and cycle

- c. Outline the main components of a pharmaceutical care plan
- d. Describe the concept of pharmaceutical care

2. Cognitive Skills

Upon successful completion of this course, students will be able to:

- a. Create a pharmaceutical care plan for a given patient case include one or more medical conditions
- b. Prepare the practice site to support pharmaceutical care practice
- c. Discuss actual and potential drug therapy problems
- d. Apply pharmaceutical care to a given patient case
- e. Discuss strategies to establish collaborative working relationship with other healthcare providers

3. Interpersonal Skills & Responsibility

Upon successful completion of this course, students will be able to:

Evaluate patient specific medical information in a given patient case

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

Discuss the rationale for the identification and resolution of drug related problems in a given patient case

Course Contents:

- Practice Skills
 - The case for pharmaceutical care
 - Identifying drug therapy problems
 - Patient data collection
 - Patient data evaluation
 - Patient care plan development
 - Documentation
 - Drug information skills for pharmaceutical care

- Professional Practice Development
 - Developing collaborative relationships
 - Pharmaceutical care for patients' specific disease
 - Self-care as pharmaceutical care practice
 - Wellness and health promotion

- Practice Site Development
 - Marketing pharmaceutical care
 - Reimbursement
 - Measuring change and outcomes in your practice
 - Staffing modification for pharmaceutical care
 - Re-engineering the pharmacy lay out
 - Obstacles to pharmaceutical care
 - Creating the infrastructure to pharmaceutical care
 - Developing a practice implementation plan

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	2		-	-	-	2 hours

The following teaching strategies are used:

Lectures

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	15%
2	Mid-term II exam	15%
3	Case studies	10%
4	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	W

W: Written**PB: Performance-Based****AP: Assignment Project****P: Portfolio**

Required Textbooks

John P. Rovers and Jay D. Currie (Editors). A Practical Guide to Pharmaceutical Care, 2nd Edition. 2003

Recommended Textbooks and Reference Material (Journals, Reports, etc)

John P. Rovers and Jay D. Currie (Editors). A Practical Guide to Pharmaceutical Care, A clinical Skills Primer 3rd Edition. 2007

Terry L. Schwinghammer¹ Joseph Dipiro, Robert Talbert, Gary Yee, Gary Matzke¹ Barbara G. Wells, L. Michael Posey (Editors). Pharmacotherapy Casebook. 5th edition (2002). McGrawHillvAppleton& Lange.

Electronic Materials:

Not available

Pharmacoeconomics and Pharmacoepidemiology

Course Name: Pharmacoeconomics and Pharmacoepidemiology	إقتصاديات الدواء والإحصاء الصيدلي	إسم المقرر:
Course Code & No.: 411 PHP	٤١١ مصد	رقم المقرر ورمزه:
Credits: 3(3+0+0)	3(3+0+0)	عدد الساعات:
Prerequisite: 343PHP	٣٤٣ مصد	المتطلب:
Level: 9	9	المستوى:

Course Description (AIM):

This course is designed to provide a framework for the understanding and application of the concepts and techniques of pharmacoeconomics and pharmacoepidemiology. The course also emphasizes the importance of utilizing Pharmacoeconomic and Pharmacoepidemiology results when evaluating drug safety. It also enables students to explore and assess vital topics and trends regarding spontaneous reporting systems, adverse drug reactions, and post marketing surveillance (PMS).

Course objectives:

This course aims to introduce students to:

- Basic concepts and theoretical aspects in pharmacoeconomics and pharmacoepidemiology
- Roles and responsibilities of pharmacoeconomists and pharmacoepidemiologists
- Basic requirements and steps needed to conduct a pharmacoeconomic or a pharmacoepidemiology-related procedures and actions
- Common study designs used for pharmacoeconomic and pharmacoepidemiologic evaluations
- Strength and limitations of the study designs used in pharmacoeconomics and pharmacoepidemiology
- Rules and formulae used for pharmacoeconomic and pharmacoepidemiological calculations
- Application of concepts and theories of pharmacoeconomics and pharmacoepidemiology on some practical scenarios and cases provided as examples

Course learning outcomes:

Knowledge

Upon successful completion of this course, students will be able to:

Explain the role of outcome research and pharmacoeconomics

Describe different types of economic and humanistic evaluations

Describe the methods, steps, and techniques used to conduct pharmacoeconomic evaluations

Describe the concept of pharmacoepidemiology and its application in pharmacy practice

Describe the concept of postmarketing surveillance, their limitations and ethical considerations

Cognitive Skills

Upon successful completion of this course, students will be able to:

Evaluate published pharmacoeconomic studies.

Apply Pharmacoeconomics concepts to clinical practice

Differentiate various types of pharmacoepidemiological methods

Apply the concepts of pharmacoepidemiology in monitoring, evaluation, and approval of new drugs

Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

Communicate the risk associated with adverse drug reactions to drug regulatory authority

Conduct pharmacoeconomic research and analyses

Course Contents:

- Pharmacoeconomics
 - Introduction to pharmacoeconomics
 - Describe main types of economic evaluation
 - Cost determination
 - Evaluating outcomes-effectiveness
 - Methods of data collection and analysis (decision analysis modeling)

- Cost benefit analysis
- Cost utility analysis (quality of life)
- Pharmacoepidemiology
 - Principles of pharmacoepidemiology
 - Study designs available for pharmacoepidemiology
 - Meta-analysis of the pharmacoepidemiology literature
 - Regulatory agencies and pharmacoepidemiology
 - Safety profiles of new drugs at the time of initial marketing
 - The spontaneous reporting systems
 - The drug approval process and the information it provides
 - Drug safety, pharmacoepidemiology and regulatory decision making
 - Risk analysis and pharmaceuticals
 - Standards of postmarketing surveillance (PMS)

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	42	-	-	-	-	42 hours

The following teaching strategies are used:

- Lectures

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	15%

2	Mid-term II exam	15%
3	Report	10%
4	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB, AP
3	Outcome 3	W, PB, AP

W: Written PB: Performance-Based AP: Assignment Project P: Portfolio

Required Textbooks

- Bungay, K, Osterhaus, J, Paladino, J, Sanchez, L. Pharmacoeconomics and Outcomes: Application for Patient Care. (1997). The American College of Clinical Pharmacy.
- F. Randy, Phd Vogenberg, Randy Vogenberg. Introduction to Applied Pharmacoeconomics. (2000). McGraw-Hill; 1st. edition.
- Brian L. Strom. pharmacoepidemiology. 3rd. edition (2000). John Wiley & Sons.

Casebooks:

Recommended Textbooks and Reference Material

- Joyce A. Cramer, Bert, Ph.D. Spilker. Quality of Life and Pharmacoeconomics, An introduction. 2nd. edition (1998). Lippincott Williams & Wilkins Publishers.
- Brenda Waning, Michael Montagne, William W. McCloskey, Rebecca A. Maki. pharmacoepidemiology: Principles & Practice. (2000). McGraw-Hill/Appleton & Lange

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pharmacotherapy-I

Course Name: Pharmacotherapy-I	1العلاجات-	إسم المقرر:
Course Code & No.: 330 PHP	مصد ٣٣٠	ورمزه: رقم المقرر
Credits: 3(3+0+1)	3(3+0+1)	المعمدة: عدد الساعات
Prerequisite: 310PHP	مصد ٣١٠	السابق: المتطلب
Level: 7	7	المستوى:

Course Description (AIM):

The purpose of this course is to integrate the pathophysiologic abnormalities of disease states (Cardiovascular, Pulmonary, and respiratory system Diseases) with concepts of drug action and therapy. State-of-the-art pharmacotherapy will be reviewed with pertinent pathophysiology and pharmacology. Emphasis will be placed on drug selection, dosing regimen design, and therapeutic drug monitoring to assess the attainment of therapeutic efficacy and avoidance of adverse reactions

Course objectives:

This course aims to introduce students to:

1. Selection of appropriate pharmacologic and non-pharmacologic therapies of selected diseases.
2. Relationship between the pathophysiology of selected diseases and the mechanism(s) of action, rationale, reasonable and practical solution to drug related problems in patient with selected diseases.
3. A plan for a desired outcomes, monitoring drug efficacy, adverse effects, compliance, and drug interactions for patient drug therapy.
4. Team based learning and effective communication skills.

Course learning outcomes:

1. Knowledge:

Upon successful completion of this course, students will be able to:

- a. Describe the pathophysiology, complications and risk factors of Dyslipidemias, Hypertension, chronic stable angina, Acute coronary syndromes, Ambulatory Heart failure, Acute Heart failure & Cardiogenic shock, Cardiac Arrhythmias, Endocarditis, Thrombosis & Peripheral Vascular Disorders, Bronchial asthma, COPD, Pneumonia, and Tuberculosis.

- b. Recognise the therapeutic goals, drug and nondrug therapy used in management of Dyslipidemias, Hypertension, chronic stable angina, Acute coronary syndromes, Ambulatory Heart failure, Acute Heart failure & Cardiogenic shock, Cardiac Arrhythmias, Endocarditis, Thrombosis & Peripheral Vascular Disorders, Bronchial asthma, COPD, Pneumonia, and Tuberculosis.

2. Cognitive Skills:

Upon successful completion of this course, students will be able to:

- a. Design appropriate care plan for management of patient with Dyslipidemias, Hypertension, chronic stable angina, Acute coronary syndromes, Ambulatory Heart failure, Acute Heart failure & Cardiogenic shock, Cardiac Arrhythmias, Endocarditis, Thrombosis & Peripheral Vascular Disorders, Bronchial asthma, COPD, Pneumonia, and Tuberculosis.
- a. Identify and prioritize therapeutic alternatives to individualize patient specific regimens.
- b. Identify the drug-related problems associated with management of patient with Dyslipidemias, Hypertension, chronic stable angina, Acute coronary syndromes, Ambulatory Heart failure, Acute Heart failure & Cardiogenic shock, Cardiac Arrhythmias, Endocarditis, Thrombosis & Peripheral Vascular Disorders, Bronchial asthma, COPD, Pneumonia, and Tuberculosis, and solve them with evidence-based therapy.
- c. Monitor therapeutic outcomes and adverse effects of drug therapy used in management of patient with Dyslipidemias, Hypertension, chronic stable angina, Acute coronary syndromes, Ambulatory Heart failure, Acute Heart failure & Cardiogenic shock, Cardiac Arrhythmias, Endocarditis, Thrombosis & Peripheral Vascular Disorders, Bronchial asthma, COPD, Pneumonia, and Tuberculosis.

3. Interpersonal Skills & Responsibility:

Upon successful completion of this course, students will be able to:

- a. Demonstrate ability to work in group and take the responsibility for self-learning.

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Effectively communicate care plan and other related medical information to patient and health care professionals.

- b. Effectively use computer technologies that help in designing an individualized care plan regimen

Course Contents:

- Dyslipidemias
- Hypertension
- Acute Heart failure & Cardiogenic shock
- Chronic Heart failure
- Thromboembolic disorders
- Coronary artery disease: (chronic stable angina)
- Acute coronary syndromes: (unstable angina & acute myocardial infarction)
- Arrhythmias
- Asthma
- Chronic obstructive pulmonary diseases
- Peripheral Vascular Disorders
- Community acquired pneumonia/nosocomial pneumonia
- Mycobacterium tuberculosis
- Endocarditis

Tutorial (small group discussion) Schedule:

- Dyslipidemias
- Hypertension
- Acute Heart failure & Cardiogenic shock
- Chronic Heart failure
- Thromboembolic disorders
- Coronary artery disease: (chronic stable angina)
- Acute coronary syndromes: (unstable angina & acute myocardial infarction)
- Arrhythmias
- Asthma
- Chronic obstructive pulmonary diseases
- Peripheral Vascular Disorders
- Community acquired pneumonia/nosocomial pneumonia
- Mycobacterium tuberculosis

- Endocarditis

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	28	14	-	-	-	42 hours

The following teaching strategies are used:

Team Based Learning (TBL)

Lectures

Case presentations

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	5%
2	Individual readiness assessment test (IRAT)	10%
3	Group readiness assessment test (GRAT)	10%
4	Mid-term I exam	10%
5	Objective Structured Clinical Pharmacy Exam (OSCPE)	15%
6	Final exam	50%

	Course outcome	4 Method of Assessment
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1	Outcome 1	W, PB
2	Outcome 2	W, PB
3	Outcome 3	W, PB
4	Outcome 4	W, PB

Course learning outcomes and Assessment

W: Written PB: Performance-Based AP: Assignment Project P: Portfolio

Required Textbooks

- Mary Anne Koda-Kimble¹ Lloyd Yee Young¹ Wayne A. Kradjan¹ B. Joseph Guglielmo. Applied Therapeutics. The Clinical Use of Drugs. 10th edition (2013). Lippincott Williams & Wilkins Publishers.
- Joseph T. Dipiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke¹ Barbara G. Wells, L. Michael Posey.

Pharmacotherapy: A Pathophysiologic Approach. 5th edition (2002). McGrawHill/Appleton & Lange.
**In Schwinghammer, T. L., In Koehler, J. M., In Borchert, J. S., & In Slain, D. (2014).
Pharmacotherapy casebook: A patient-focused approach.
Eric T. Q. Herfindal and Dick R. Gourley ~ditors), Greta K. Gourley (Editor), James M. Holt
(Editors).Textbook of Therapeutics: Drug and Disease Management. 7th edition (2000).**

Casebooks:

**Greta K. Gourley, James M. Holt (Editors) Casebook for Textbook of Therapeutics: Drug and
disease management. 7th edition (2000). Lippincott Williams & Wilkins Publishers.
Terry L. Schwinghammer1 Joseph Dipiro, Robert Talbert, Gary Yee, Gary Matzke1 Barbara G.
Wells, L. Michael Posey (Editors). Pharmacotherapy Casebook. 5th edition (2002). McGraw-
HillvAppleton & Lange.**

Recommended Textbooks and Reference Material

- Walker, R., & Edwards, C. (2003). Clinical pharmacy and therapeutics. Edinburgh: Churchill Livingstone.

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pharmacotherapy II

Course Name: Pharmacotherapy-II	العلاجات-٢	إسم المقرر:
Course Code & No.: PHP 340	٣٤٠ مصد	رقم المقرر ورمزه:
Credits: 3(3+0+1)	3(3+0+1)	عدد الساعات:
Prerequisite: PHP 330	٣٣٠ مصد	المتطلب:
Level: 8	10	المستوى:

Course Description (AIM):

The purpose of this course is to integrate the pathophysiologic abnormalities of disease states (Gastroenterology, Nephrology and Hepatology) with concepts of drug action and therapy. State-of-the-art pharmacotherapy will be reviewed with pertinent pathophysiology and pharmacology. Emphasis will be placed on drug selection, dosing regimen design, and therapeutic drug monitoring to assess the attainment of therapeutic efficacy and avoidance of adverse reactions.

Course Objectives:

This course aims to introduce students to:

- Therapeutic knowledge and appropriate pharmacologic and non-pharmacologic therapies of selected diseases.
- Rationale, reasonable and practical solution to drug related problems in patient with selected diseases.
- Plan for monitoring drug efficacy, adverse effects, compliance, drug interactions and desired outcome for patient drug therapy of the selected diseases.

Course Learning Outcomes:

5. Knowledge:

Upon successful completion of this course, students will be able to:

- a. Describe the pathophysiology, complications and risk factors of upper and lower gastrointestinal infections, viral hepatitis, kidney and liver diseases, urinary tract infections, gout, and arthritic diseases.
- b. Recognise the therapeutic goals, drug and nondrug therapies used in management of upper and lower gastrointestinal infections, viral hepatitis, kidney and liver diseases, urinary tract infections, gout, and arthritic diseases.

6. Cognitive Skills:

Upon successful completion of this course, students will be able to:

- a. Design appropriate care plan for management of patient with upper and lower gastrointestinal infections, viral hepatitis, kidney and liver diseases, urinary tract infections, gout, and arthritic diseases.
- b. Identify and prioritize therapeutic alternatives to individualize patient specific regimens.
- c. Identify the drug-related problems associated with management of patient with upper and lower gastrointestinal infections, viral hepatitis, kidney and liver diseases, urinary tract infections, gout, and arthritic diseases, and solve them with evidence-based therapy.
- d. Monitor therapeutic outcomes and adverse effects of drug therapy used in management of patient with upper and lower gastrointestinal infections, viral hepatitis, kidney and liver diseases, urinary tract infections, gout, and arthritic diseases.

7. Interpersonal Skills & Responsibility:

Upon successful completion of this course, students will be able to:

- b. Demonstrate ability to work in group and take the responsibility for self-learning.

8. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Effectively communicate care plan and other related medical information to patient and health care professionals.
- b. Effectively use computer technologies that help in designing an individualized care plan regimen

Course Contents:

- **Gastroenterology Pharmacotherapy:**
 - Peptic ulcer diseases
 - Liver cirrhosis
 - Hepatitis
 - Intra-abdominal infections
 - Inflammatory bowel diseases
 - Gastroenteritis, diarrhea and constipation
 - Pancreatitis
 - Drug-induced hepatotoxicity
- **Renal and UroPharmacotherapy**
 - Acute and chronic renal failure
 - Dialysis and other renal replacement therapies
 - Drug-induced nephrotoxicity

- Urinary tract infections
- STDs
- **Ortho+rheumatic**
 - Osteoporosis & osteomalacia
 - Gout and hyperuricemia
 - Osteoarthritis
 - Rheumatoid arthritis
 - Systemic lupus erythromatosis

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	42	14	-	-	-	56 hours

The following teaching strategies are used:

- OSCPE
- Group discussions
- Case presentations
- **Team Based Learning (TBL)**

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	5%
2	Individual readiness assessment test (IRAT)	10%
3	Group readiness assessment test (GRAT)	10%
4	Mid-term I exam	10%
5	Objective Structured Clinical Pharmacy Exam (OSCPPE)	15%
6	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB, AP
4	Outcome 4	W, AP

W: Written PB: Performance-Based AP: Assignment Project P: Portfolio

Required Textbooks

- Mary Anne Koda-Kimble¹ Lloyd Yee Young¹ Wayne A. Kradjan¹ B. Joseph Guglielmo. Applied Therapeutics. The Clinical Use of Drugs. 10th edition (2013). Lippincott Williams & Wilkins Publishers.
- Joseph T. Dipiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke¹ Barbara G. Wells, L.

Michael Posey. Pharmacotherapy: A Pathophysiologic Approach. 5th edition (2002). McGrawHill/Appleton & Lange.

- In Schwinghammer, T. L., In Koehler, J. M., In Borchert, J. S., & In Slain, D. (2014). Pharmacotherapy casebook: A patient-focused approach.
- Eric T. Q. Herfindal and Dick R. Gourley (Editors), Greta K. Gourley (Editor), James M. Holt (Editors). Textbook of Therapeutics: Drug and Disease Management. 7th edition (2000).

Casebooks:

Greta K. Gourley, James M. Holt (Editors) Casebook for Textbook of Therapeutics: Drug and disease management. 7th edition (2000). Lippincott Williams & Wilkins Publishers.

Terry L. Schwinghammer, Joseph DiPiro, Robert Talbert, Gary Yee, Gary Matzke, Barbara G. Wells, L. Michael Posey (Editors). Pharmacotherapy Casebook. 5th edition (2002). McGrawHill/Appleton & Lange.

Recommended Textbooks and Reference Material

- Walker, R., & Edwards, C. (2003). Clinical pharmacy and therapeutics. Edinburgh: Churchill Livingstone.

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pharmacotherapy-III

Course Name: Pharmacotherapy-III	3العلاجات-	إسم المقرر:
Course Code & No.: 410 PHP	٤١٠ مصد	ورمزه:رقم المقرر
Credits: 3(3+0+1)	3(3+0+1)	عدد الساعات:
Prerequisite: 340PHP	٣٤٠ مصد	:المتطلب
Level: 9	9	:المستوى

Course Description (AIM):

This course is formulated to integrate the pathophysiologic abnormalities of disease states (Endocrinology, Neurology, Psychiatry, and Reproductive system) with concepts of drug action and therapy. State-of-the-art pharmacotherapy will be reviewed with pertinent pathophysiology and pharmacology. Emphasis will be placed on drug selection, dosing regimen design and therapeutic drug monitoring to assess the attainment of therapeutic efficacy and avoidance of adverse reactions.

Course objectives:

This course aims to introduce students to:

- a. Therapeutic knowledge necessary to manage patients with selected diseases
- b. Appropriate pharmacologic and non-pharmacologic therapies of selected diseases
- c. Relationship between the pathophysiology of selected diseases and the mechanism(s) of action of drugs used to treat these diseases
- d. Rationale, reasonable and practical solution to drug related problems in patient with selected diseases
- e. Desired outcomes of pharmacotherapy of selected diseases
- f. A plan for monitoring drug efficacy, adverse effects, compliance, and drug interactions for patient drug therapy

Course learning outcomes:

1. Knowledge:

Upon successful completion of this course, students will be able to:

- e. Describe the pathophysiology, complications and risk factors of the diseases covered in pharmacotherapy-III course.
- f. Recognise the therapeutic goals, drug and nondrug therapy used in management of the diseases covered in pharmacotherapy-III course.

2. Cognitive Skills:

Upon successful completion of this course, students will be able to:

- g. Design appropriate care plan for management of patient with the diseases covered in pharmacotherapy-III course.
- h. Identify and prioritize therapeutic alternatives to individualize patient specific regimens.
- i. Identify the drug-related problems associated with management of patient with the diseases covered in pharmacotherapy-III course and solve them with evidence-based therapy.
- j. Monitor therapeutic outcomes and adverse effects of drug therapy used in management of patient with the diseases covered in pharmacotherapy-III course.

3. Interpersonal Skills & Responsibility:

Upon successful completion of this course, students will be able to:

- c. Demonstrate ability to work in group and take the responsibility for self-learning.

4. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- k. Effectively communicate care plan and other related medical information to patient and health care professionals.
- l. Effectively use computer technologies that help in designing an individualized care plan regimen

Course Contents:

- Endocrinology Pharmacotherapy:
 - Diabetes mellitus

- Thyroid disorders
 - Neurology Pharmacotherapy:
 - Cerebrovascular diseases
 - Headache disorders
 - Parkinson's disease
 - Epilepsy
 - Psychiatry Pharmacotherapy:
 - Mood disorder I: major depressive disorders
 - Mood disorder II: bipolar affective disorders
 - Anxiety disorders
 - Schizophrenia
 - Reproductive Pharmacotherapy:
 - Premenstrual syndrome
 - Hormone replacement therapy
 - Contraception
 - Drugs in pregnancy and lactation
- Tutorial (small group discussion) Schedule:
- Diabetes mellitus type I
 - Diabetes mellitus type II
 - Thyrotoxicosis
 - Stroke
 - Migraine and tension headache
 - Parkinson's disease
 - Epilepsy
 - Depression
 - Bipolar affective disorders
 - Anxiety disorders
 - Schizophrenia
 - Premenstrual syndrome and hormone replacement therapy

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	3	1	-	-	-	4 hours

The following teaching strategies are used:

Lecture/Class-based

Team Based Learning (TBL)

Oral Presentations

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	5%
2	Individual readiness assessment test (IRAT)	10%
3	Group readiness assessment test (GRAT)	10%
4	Mid-term I exam	10%
5	Objective Structured Clinical Pharmacy Exam (OSCPE)	15%
6	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W, PB
2	Outcome 2	W, PB
3	Outcome 3	W, PB,
4	Outcome 4	W, PB

W: Written

PB: Performance-Based

AP: Assignment Project

P: Portfolio

Required Textbooks

- Mary Anne Koda-Kimble¹ Lloyd Yee Young¹ Wayne A. Kradjan¹ B. Joseph Guglielmo. Applied Therapeutics. The Clinical Use of Drugs. 10th edition (2013). Lippincott Williams & Wilkins Publishers.
- Joseph T. Dipiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke¹ Barbara G. Wells, L. Michael Posey. Pharmacotherapy: A Pathophysiologic Approach. 5th edition (2002). McGrawHill/Appleton & Lange.
- In Schwinghammer, T. L., In Koehler, J. M., In Borchert, J. S., & In Slain, D. (2014). Pharmacotherapy casebook: A patient-focused approach.
- Eric T. Q. Herfindal and Dick R. Gourley ~ditors), Greta K. Gourley (Editor), James M. Holt (Editors).Textbook of Therapeutics: Drug and Disease Management. 7th edition (2000).

Casebooks:

Greta K. Gourley, James M. Holt (Editors) Casebook for Textbook of Therapeutics: Drug and disease management. 7th edition (2000). Lippincott Williams & Wilkins Publishers.

Terry L. SchwInghammer1 Joseph Dipiro, Robert Talbert, Gary Yee, Gary Matzke1 Barbara G. Wells, L. Michael Posey (Editors). Pharmacotherapy Casebook. 5th edition (2002). McGrawHilvAppleton& Lange.

Recommended Textbooks and Reference Material

- Walker, R., & Edwards, C. (2003). Clinical pharmacy and therapeutics. Edinburgh: Churchill Livingstone.

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Pharmacotherapy-IV

Course Name: Pharmacotherapy-IV	العلاجات-٤	إسم المقرر:
Course Code & No.: 420 PHP	٤٢٠ مصد	رقم المقرر ورمزه:
Credits: 3(3+0+1)	3(3+0+1)	عدد الساعات:
Prerequisite: 410PHP	٤١٠ مصد	المتطلب:
Level: 10	10	المستوى:

Course Description (AIM):

The purpose of this course is to integrate the pathophysiologic abnormalities of disease states (Oncology, Hematology, Dermatology, Transplantation, ID, and Pediatrics) with concepts of drug action and therapy. State-of-the-art pharmacotherapy will be reviewed with pertinent pathophysiology and pharmacology. Emphasis will be placed on drug selection, dosing regimen design, and therapeutic drug monitoring to assess the attainment of therapeutic efficacy and avoidance of adverse reactions.

Course Objectives

This course aims to introduce students to:

- Necessary therapeutic knowledge to manage patients with selected diseases based on evidence based medicine.

Course learning outcomes:

9. Knowledge:

Upon successful completion of this course, students will be able to:

- a. Describe the pathophysiology, complications and risk factors of Anemia, Solid tumors, Pain Management, Blood Cancers, Sepsis, Skin infections, Dermatological diseases, Ophthalmology, ENT, HIV, Transplantation and Paediatric diseases.
- b. Recognise the therapeutic goals, drug and nondrug therapy used in management of Anemia, Solid tumors, Pain Management, Blood Cancers, Sepsis, Skin infections, Dermatological diseases, Ophthalmology, ENT, HIV, Transplantation and Paediatric diseases.

10. Cognitive Skills:

Upon successful completion of this course, students will be able to:

- a. Design appropriate care plan for management of patient with Anemia, Solid tumors, Pain Management, Blood Cancers, Sepsis, Skin infections, Dermatological diseases, Ophthalmology, ENT, HIV, Transplantation and Paediatric diseases.
- b. Identify and prioritize therapeutic alternatives to individualize patient specific regimens.
- c. Identify the drug-related problems associated with management of patient with Anemia, Solid tumors, Pain Management, Blood Cancers, Sepsis, Skin infections, Dermatological diseases, Ophthalmology, ENT, HIV, Transplantation and Paediatric diseases, and solve them with evidence-based therapy.
- d. Monitor therapeutic outcomes and adverse effects of drug therapy used in management of patient with Anemia, Solid tumors, Pain Management, Blood Cancers, Sepsis, Skin infections, Dermatological diseases, Ophthalmology, ENT, HIV, Transplantation and Paediatric diseases.

11. Interpersonal Skills & Responsibility:

Upon successful completion of this course, students will be able to:

- a. Demonstrate ability to work in group and take the responsibility for self-learning.

12. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Effectively communicate care plan and other related medical information to patient and health care professionals.
- b. Effectively use computer technologies that help in designing an individualized care plan regimen

Course Contents:

1. Anemia.
2. Sepsis
3. Leukemia
4. Pediatric Pharmacotherapy.
5. Dermatologic Disorders.
6. Transplantation pharmacotherapy
7. Solid tumors
8. Ophthalmology pharmacotherapy
9. Pain and its Management

10. HIV.

11. ENT

Tutorial (small group discussion) Schedule:

1. Anemia.

2. Sepsis

3. Leukemia

4. Pediatric Pharmacotherapy.

5. Dermatologic Disorders.

6. Transplantation pharmacotherapy

7. Solid tumors

8. Ophthalmology pharmacotherapy

9. Pain and it's Management

10. HIV.

11. ENT

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	42	14	-	-	-	56 hours

The following teaching strategies are used:

- Lectures
- Case presentations
- **Team Based Learning (TBL)**

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	5%
2	Individual readiness assessment test (IRAT)	10%
3	Group readiness assessment test (GRAT)	10%
4	Mid-term I exam	10%
5	Objective Structured Clinical Pharmacy Exam (OSCPE)	15%
6	Final exam	50%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB
4	Outcome 4	W, PB

W: Written**PB: Performance-Based****AP: Assignment Project****P: Portfolio**

Learning Resources

Required Textbooks

- Mary Anne Koda-Kimble¹ Lloyd Yee Young¹ Wayne A. Kradjan¹ B. Joseph Guglielmo. Applied Therapeutics. The Clinical Use of Drugs. 10th edition (2013). Lippincott Williams & Wilkins Publishers.
- Joseph T. Dipiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke¹ Barbara G. Wells, L. Michael Posey. Pharmacotherapy: A Pathophysiologic Approach. 5th edition (2002). McGrawHill/Appleton & Lange
- In Schwinghammer, T. L., In Koehler, J. M., In Borchert, J. S., & In Slain, D. (2014). Pharmacotherapy casebook: A patient-focused approach.
- Eric T. Q. Herfindal and Dick R. Gourley (editors), Greta K. Gourley (Editor), James M. Holt (Editors). Textbook of Therapeutics: Drug and Disease Management. 7th edition (2000).

Essential References Materials (Journals, Reports, etc.)

Casebooks:

Greta K. Gourley, James M. Holt (Editors) Casebook for Textbook of Therapeutics: Drug and disease management. 7th edition (2000). Lippincott Williams & Wilkins Publishers.

Terry L. Schwinghammer¹ Joseph Dipiro, Robert Talbert, Gary Yee, Gary Matzke¹ Barbara G. Wells, L. Michael Posey (Editors). Pharmacotherapy Casebook. 5th edition (2002). McGrawHill/Appleton & Lange.

Recommended Textbooks and Reference Material (Journals, Reports, etc)

Walker, R., & Edwards, C. (2003). Clinical pharmacy and therapeutics. Edinburgh: Churchill Livingstone.

Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

Pharmacy Management

Course Name: Pharmacy Management	الإدارة الصيدلانية	إسم المقرر:
Course Code & No.: 412 PHP	٤١٢ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: 341PHP	٣٤١ مصد	المتطلب:
Level: 9	9	المستوى:

Course Description (AIM):

This course is designed to introduce the principles of management as they applied to professional pharmacy practice. The course is intended to provide pharmacy students with a basic understanding of the practical aspects of managing a pharmacy operation. This Includes the basic functions of planning, organizing, directing, coordinating, and controlling as they relate to fiscal, personnel, and merchandize management. In addition, the course will Introduce the student to the principles and methods of human resources management by teaching topics such as recruitment, selection, orientation, training, motivation, management by objectives, and performance evaluation. It will also introduce the student to principles and methods of financial and operational management such as principles of accounting, financial statements, purchasing, and inventory control.

Objectives:

Upon successful completion of this course, students will be able to:

- Discuss principles of effective management.
- Understand the principles of developing a motivating environment and how to deal effectively with personal conflicts.
- Prepare pharmacy budget for the coming financial years.
- Understand the principles of using budget in planning, controlling and evaluation of employee performance.
- Discuss the principles and tools that should be followed for effective, practical, accurate and less time consuming inventory control.
- Read both income and financial position statements, and understand their uses in management.
- Discuss various steps and processes required for preparation of financial statements.
- Understand the principals of purchasing and how to handle each stage of the various purchasing functions.

- Recognize the meaning and scope of marketing, and at the same time be able to Identify the marketing variables that would influence product and service decision.

Course Contents:

- Management by objectives
- Pharmacy manager functions
- Planning, organizing, directing, coordinating and controlling
- Human resources management:
 - Recruitments
 - Orientation and training
 - Performance evaluation
 - Employee motivation
 - Conflict management
 - Disciplining the employee
- Accounting principals
- Financial statements
- Budgeting
- Purchasing functions
- Inventory control
- Marketing for the pharmacist

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	20%

2	Mid-term II exam	20%
3	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB, AP
3	Outcome 3	W, PB, AP

W: Written PB: Performance-Based AP: Assignment Project P: Portfolio

Text Book(s):

Effective pharmacy management: A comprehensive presentation of practical management techniques for pharmacists. Seventh edition. Marion Merrell Inc.

Norman V. Carroll. Financial management for pharmacists: A decision-making approach. 1991. Lea & Febiger.

Pharmacy Practice

Course Name: Pharmacy Practice	الممارسة الصيدلانية	اسم المقرر:
Course Code & No.: 217 PHP	٢١٧ مصد	رقم المقرر ورمزه:
Credits: 2(2+0+0)	2(2+0+0)	عدد الساعات:
Prerequisite: 120PHP	١٢٠ مصد	المتطلب:
Level: 3	3	المستوى:

Course Description (AIM):

This course is designed to introduce the student to the various roles played by pharmacists In hospital and community settings, and the ways in which drugs are compared, selected, and used in the health care environment. The course also presents comprehensive principles of contemporary institutional pharmacy operation systems (e.g., a unit dose drug distribution system, etc). The course will emphasize the challenges that face pharmacy practice and the Impact of automation in hospital and community pharmacies.

Course objectives:

1. Concept of pharmaceutical care and role of a pharmacist working in any of the specialist areas.
2. Processes of drug use evaluation and the various drugs information sources available to the evaluation and comparison of therapies in individual patients.
3. Pharmacy policies and procedures in the healthcare settings and the principles and procedures of drugs manufacture and supply.

Learning outcomes

- a. Knowledge

Upon successful completion of this course, students will be able to:

- a. Define the meaning of pharmaceutical care.

- b. Describe the various drugs information sources available to the evaluation and comparison of therapies.
- c. Define the principles and procedures of drugs manufacture and supply as they apply to pharmacy practice.

b. Cognitive Skills

Upon successful completion of this course, students will be able to:

- Analyze pharmacy policies and procedures in the healthcare setting (e.g., the formulary management system, clinical practice guidelines and the application of technology innovation in drug distribution and drug information).

c. Interpersonal Skills & Responsibility

Upon successful completion of this course, students will be able to:

- a. Demonstrate the role of a pharmacist working in a Community pharmacy
- b. Demonstrate the role of a pharmacist working in a Hospital pharmacy

d. Communication, Information Technology, Numerical

Upon successful completion of this course, students will be able to:

- a. Demonstrate ability to work in group and take responsibility for self-learning.

Course Contents:

- Distinctions between various roles of the pharmacist in the healthcare system
- Roles of the community pharmacist as a healthcare provider
- Roles of the pharmacist in the hospital
- Roles of the pharmacist in the pharmaceutical industry
- Medication Distribution Systems in the hospital
- Pharmacy automation
- Repacking of Pharmaceuticals
- Inventory Control and Drug Supply
- Medication Management (Pharmacy and Therapeutics Committee and Formulary system)
- Hospital Pharmacy practice standards. The policy and procedure manual
- Intravenous Admixture systems and aseptic dispensing
- Medication safety and Adverse Drug Reaction Monitoring

- Pharmacist managed clinics + DPIC
- Investigational Drugs in the hospital

Teaching/learning methods and Contact Hours

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30 hrs.	-	-	-	-	30 hrs.
Credit	30 hrs.	-	-	-	-	30 hrs.
3. Additional private study/learning hours expected for students per week.				8hr		
8 hours/week						

The following teaching strategies are used:

Team Based Learning (TBL)

- Lectures

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	15%

2	Mid-term 2 exam	15%
3	Presentation	5%
4	Report	5%
5	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W
4	Outcome 4	W, AP, PB

W: Written, PB: Performance-Based, AP: Assignment Project.

1. List Required Textbooks

- Thomas R. Brown (Editor). Handbook of Institutional Pharmacy Practice. 3rd edition (1992). AmerSoc of Health System Pharmacists.
- Judith E. Thompson, Kroonm Thompson (Editors). A Practical Guide to Contemporary Pharmacy Practice. 1st edition (1998). Lipplncott, Williams & Wilkins.
- Lilian M. Azzopardi, Lilian M. Asuopardi. Validation Instruments for Community Pharmacy: Pharmaceutical Care for the Third Millennium. (2000). Haworth Press.
- Ben J Whalley, , et al. (Editors). Foundation in Pharmacy Practice Practice. 1st edition (2008). Pharmaceutical Press.

2. List Essential References Materials (Journals, Reports, etc.)

Important journal and report in the campus are available in library

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

- Robert J. Cipolle, Peter C. Moriey, Linda M. Strand (Editors) Pharmaceutical Care Practice. (1998). McGraw-Hill Professional.
- John P. Rovers (Editor), Harry P. Hagel, Jay D. Cume. Practical Guide to Pharmaceutical Care. (2002). APhA Publications.
- Best Practices for Heafth-System Pharmacy: Positions & Guidance Documents of ASHP. 2003-2004.
- American Society of Health-System Pharmacists.

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

5. Other learning material such as computer-based programs/CD₂, professional standards or regulations and software. N/A

Scientific Writing and Seminar-II

Course Name: Scientific Writing and	الكتابة العلمية وحلقة نقاش-٢	إسم المقرر:
Course Code & No.: 421 PHP	٤٢١ مصد	رقم المقرر
Credits: 2(1+1+0)	2(1+1+0)	عدد
Prerequisite: 325PHP	٣٢٥ مصد	المتطلب:
Level: 10	١٠	المستوى:

Course Description (AIM):

This course is designed to provide the student with an overview of the current conventions and practices used in scientific and technical writing in the field of pharmacy and other health-related disciplines. This course is considered as an intensive introduction on how to prepare, write, edit and review pharmacy research communications, pharmacy reports, and patient education materials. The student will also learn how to present and convey his ideas with conviction, poise and style. A limited questionnaire-type field research project will be conducted by students as a part of the course requirements. Students will apply their acquired knowledge in coding, recoding and analyzing collected data to formulate, write, and present the results.

Objectives:

This course aims to introduce students to:

- Effective writing skills in scientific materials related to pharmacy and other health-related disciplines.
- Skills on presentation and the use of audiovisual media to enhance presentation.
- Research-writing steps and get an opportunity to analyze and present results by providing a practical hand-on experience in conducting small research projects.

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- Reproduce the knowledge as to how to write scientific publications and report using an effective and scientific writing style.
- Develop scientific knowledge and skills to collect scientific data in a research project and to analyse and interpret the data.
- Demonstrate effective presentation skills by presenting the report of their research projects.

Course Contents:

- Types of research manuscripts: original research articles, review articles, editorials, case reports, short communications, and letters to editor.

- Vancouver style of writing research papers (The unified requirements for biomedical research articles).
- Structure of a scientific paper.
- Developing an effective writing style.
- Language and sentence construction (choice of words, passive/active tense, punctuation, grammar).
- Paragraph construction (different types of arguments)
- Plagiarism.
- Successful report writing.
- Types of oral presentations: persuasive.
- Oral presentations: the difference between oral and written presentations, preparation, technique, and common problems.
- Scientific conventions (taxonomy, measures, numbers, units, abbreviations, acronyms, symbols)
- Oral presentation skills.

Lab Sessions:

- The course will emphasize on practical exercises to practice the ideas and methods. The student will work on his/her own material and the group work will concentrate on one case study selected from the group.
- A research project in questionnaire format to be conducted by the students in this course. Each student is required to distribute the questionnaire, collect and analyze the data using the appropriate software program (SPSS) and write a report. The students will also prepare professional slides to present their results independently. Several suggested topics dealing with one of the following research titles, as an example, can be offered:
 - Job satisfaction for pharmacists.
 - Patients' attitude toward hospital pharmacy services.
 - The effect of patient counseling on patient compliance.
 - Community pharmacy services.
 - Patient education in various disease areas.
 - Preparation of patient education materials in both Arabic and English.
 - Preparation of drug Package Inserts about selected drugs.
 - Promotional drug presentations.

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	15	-	-	-	30	45 hours

The following teaching strategies are used:

- Lectures
- Project & Presentation

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Mid-term I exam	10%
2	Mid-term II exam	10%
3	Presentations	10%
4	Report	10%
5	Final exam	60%

Course Outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W
3	Outcome 3	W-AP
4	Outcome 4	W

W : Written PB: Performance Based AP: Assignment Project P: Portfolio

Text Book(s):

Matthews JR, Bowen JM, Matthews RW. Successful Scientific Writing: A Step-by-step Guide for the Biological & Medical Sciences. 2000. Cambridge University Press. ISBN: 0521789621.

Bell J. Doing Your Research Project: A Guide for First time Researchers in Education and Social Science. 1987. Open University Press. ISBN: 0335159877.

Bell L. Doing Your Research Project: & Good Research Guide. 2003. Open University Press. ISBN: 0335215335

Letendre. Fundamentals of Writing for the Biomedical Sciences. 1991.

Michigan State University Press. ISBN: 0888647697.

Casebooks:

None

Recommended Textbooks and Reference Materials:

Day RA. How to Write & Publish a Scientific Paper. 1998. Greenwood Press, ISBN:1573561657.

Bracel. Questionnaire Design. 2004. Kogan Page, ISBN: 074944181X.

Zeiger M. Essentials of writing biomedical research papers. 2nd ed. 2000. McGraw-Hill.

Pechenik JA. A short guide to writing about biology. 3rd ed. 1997. Longman.
Iverson C, Dan BB, Glitman P et al. American Medical Association manual of style. 8th ed.
1989. Chicago: American Medical Association;

Electronic Materials

Online resources available at:

<http://www.library.gu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.gu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.gu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>

Scientific writing and Seminars-I

Course Name: Scientific Writing and Seminar-I	إسم المقرر: الكتابة العلمية وحلقة نقاش-١
Course Code & No.: 325 PHP	رقم المقرر ٣٢٥ مصد
Credits: 1(1+0+0)	عدد الساعات: 1(1+0+0)
Prerequisite: 216PHP	المتطلب: ٢١٦ مصد
Level: 8	المستوى: 8

Course Description:

The purpose of this course is to introduce basics of scientific presentation and discussions of current issues in the profession of clinical pharmacy. Emphasis will be on general evaluation of drug literature, articles for proper research, design and data interpretation including use of multimedia, slides, overheads, handouts and other visual aids as well as methods of answering questions from the audience

Course Objectives

This course aims to introduce students the:

- Importance of the scientific article, presentation and technologies used for presentation
- Beneficial aspects of various software used for presentation in seminars.
- Evaluation of scientific articles.

Learning outcomes:

1. Knowledge

By the end of the course, students will be able to:

- a. Describe the methods how to make presentation and how to present them in class
- b. State the methods of writing the scientific articles

2. Cognitive Skills

- a. Illustrate the articles writing.
- b. Prepare their presentation to present in the seminars

3. Interpersonal Skills & Responsibility

c. Communication skills of the students should be improved

4. Communication, Information Technology, Numerical

a. Student's effective participations in the discussion of subjects.

b. They will made presentation relating to clinical topics and present them in the class.

Course Contents:

- Introduction to scientific presentation
- Overview of available audiovisual presentation aids
- Basics of scientific writing
- Basics of scientific discussion
- Scientific presentation techniques
- Scientific and clinical paper evaluation
- Types of scientific and clinical research
- Interactive presentation
- Clinical pharmacy topics presentations

Teaching/learning methods and Contact Hours

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	15	-	-	-	-	15 hours

The following teaching strategies are used:

- Lectures/Class-based
- Oral/Report presentations

Assessment and grading plan:

	Assessment method	Proportion of Total Assessment
1	Oral presentation	10%
2	Report preparation	10%
3	Mid-term I exam	10%
4	Mid-term II exam	10%
6	Final exam	60%

Course outcomes and Assessment

	Course outcome	Method of Assessment
1	Outcome 1	W
2	Outcome 2	W, PB
3	Outcome 3	W, PB, AP
4	Outcome 4	W, AP

W: Written**PB: Performance-Based****AP: Assignment Project****P: Portfolio**

Required Textbooks

- How to Run Seminars and Workshops: Presentation Skills for Consultants, Trainers and Teachers, Robert Jolles.
- How to Develop and Promote Successful Seminars and Workshops by Howard L. Shenson

Additional suggested readings:

- Marketing and Promoting Your Own Seminars and Workshops, Fred Gleeck.
- Profitable Seminars by Len Wood.

Electronic Materials

Online resources available at:

<http://www.library.qu.edu.sa/Pages/default.aspx>

<http://www.pharmacylibrary.com.ezproxy.qu.edu.sa/public/about>

<http://accesspharmacy.mhmedical.com/ss/About.aspx>

<http://accesspharmacy.mhmedical.com.ezproxy.qu.edu.sa/ss/About.aspx>

<http://search.proquest.com/>