

Pharmacy Informatics

PHA 498

Wilkes University School of Pharmacy

Fall 2013 Syllabus

Instructors

Joseph Zarcone RPh
Pharmacy Informatics Specialist

Class Information

Wednesdays; 4:00-6PM
SLC ; Rm XXX

PHA 498C**Course Credits: 2****Class time/room:**

Wednesdays 4-6pm; Stark Learning Center, Room 205. Specific classes, practical experiences, or examinations may take place in other setting, to be determined by the instructor. Students will be informed of location changes.

Instructor:

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Course Coordinator:

Dana Manning Pharm.D., R.D., LDN
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Course Description:

Pharmacy Informatics is concerned with the use of technology to improve patient care as well as increasing patient safety. Informatics deals with data generated by software used in patient care, not only the storage of data but also the retrieval of data as meaningful clinical reports and the management of information systems to assure patient safety and optimal medical outcomes.

Prerequisites:

P-2 or P-3 Standing

Course Learning Objectives:

Upon completion of this course, students will demonstrate the following learning outcomes that will position them for entry in to clinical pharmacy practice with the knowledge to utilize, support, and develop the realm of pharmacy informatics.

- 1) Identify the technological components and communication points (interfaces) within a computerized pharmacy technology system.
- 2) Manipulate data within medical software systems to support the creation of informational reports, analyze data, and foster increased use of referential tools in pharmacy practice settings.
- 3) Demonstrate how to conduct basic pharmacy operations utilizing examples of different available technologies (software, hardware).
- 4) Analyze the challenges facing pharmacy informatics practice and the drivers for continued technological and clinical/administrative development.
- 5) Relate pharmacy informatics practice and capabilities to future changes and needs in the healthcare system, with an emphasis on safe medication practices.

Educational Outcomes:

The following educational outcomes are taken from the School of Pharmacy outcomes document, (rev 2012).

1.2 Evaluate the Prescription, Prepare, and Dispense Medication

- 1.2.1 Consider legal requirements, ethical principles, and relevant policies to assess drug orders and prescriptions. 10
- 1.2.2 Determine the completeness and accuracy of information in a drug order or prescription. 11
- 1.2.3 Determine the appropriateness of drug doses, dosage forms, routes of administration, and frequencies of administration. 12
- 1.2.7 Prepare prescription labeling appropriate for a drug product. 16
- 1.2.8 Accurately dispense drug products in accordance with legal requirements and professional responsibilities. 17

Section 2: Systems Management

- 2.1 Describe how the medication distribution system supports the safe and effective use of medication. 47
- 2.3 Describe the role of professional staff and support personnel in medication distribution. 49
- 2.4 Describe the importance of policy and procedures to ensure safe and accurate medication use and general pharmacy operations including personnel, administrative, physical resources, information technology and/or informatics. 50
- 2.6 Recognize the importance of quality assurance and quality improvement to promote safe medication use and systems management. 52
- 2.7 Analyze the root cause of medication errors. 53
- 2.8 Implement or improve practice to reduce medication errors. 54
- 2.9 Explain how technology can be utilized to reduce medication errors. 55
- 2.10 Use appropriate systems (institutional and government) to report adverse drug reaction and medication errors. 56

Course Evaluation

(2) Didactic and Skill Based Assessments.....	33.3% Each
Future of Informatics Presentation.....	33.3%

Course Grading

90 - 100	4.0	70 - 74	2.0
85 - 89	3.5	65 - 69	1.5
80 - 84	3.0	< 65	0.0
75 - 79	2.5		

Required Text/Materials

To be determined by the Instructor. Required readings may be posted by the instructor during the class.

Suggested reading: Pharmacy Informatics

By: Philip O. Anderson, Susan M. McGuinness, Philip E. Bourne

Course Website

Desire to Learn

Attendance Policy

Class attendance is **mandatory**. There will be no makeup of quizzes for unexcused absences, and a grade of **zero** will be given. In circumstances where the absence is excusable, the student must contact **Mr Zarcone or the Instructor** at least one-half hour before class. Make-up quizzes or assignments for these cases will be given at the discretion of the instructor.

Academic Honesty

Any student who violates the Intellectual Responsibility and Plagiarism Policy as stated in the University Student Handbook Violators will be subject to disciplinary action which may include failure of the course.

Professionalism

Guidelines are available in the Pharmacy Student Handbook ("Standards of Conduct") and these should be regularly reviewed. Violating these guidelines or lack of respect for other students or instructors will not be tolerated. Failure to abide by these guidelines or inappropriate behavior may result in lowered grades or failure of the course.

Schedule of Topics

Date	Topic	Activity
Class 1 8/28/13	Introduction to Informatics: Objectives, Definitions, The Who, What, and Why of Pharmacy Informatics	Building a Database Utilizing Access to build a database of information that will be utilized during the course to extract and package data from.
Class 2 9/4/13	The Modern History of Informatics: Drivers of Change, History of Medical Technology, History of Pharmacy Technology, Past 10 Years, Next 10 Years, Obstacles	
Class 3 9/11/13	The Tools of the Trade: Computer components and functions, Program Development,	
Class 4 9/18/13	Tools of the Trade 2: Standards and Vocabularies, Tables. MetaData, Relational DataBases, Queries	
Class 5 9/25/13	Deriving Useful Information: Query Criteria, Boolean Geometry, Reporting, Automating Reports, Practical Applications of Querys	Writing Reports
Class 6 10/2/13	Connecting Through Networks: Network Communications, Interfaces – Department-wide to State-wide, Integration vs Interfacing, Advantages, Hospital Information Systems, Impact on Patient Care (Acute Care and Community Care)	Creating a Network
Class 7 10/9/13	Assessment 1: Didactic and Skill Practicum (8/28-10/2)	Utilize your database to write a report that will be communicated through a network
Class 8 10/16/13	The Role of Regulations: State of Healthcare, Meaningful Use, Obamacare, Healthcare Costs, Patient Safety, Obstacles and Benefits, Medical Errors, Institute for	Regulations and Medication Management in the real world: Narcotics.

	Safe Medical Practice, Joint Commission for the Accreditation of Hospitals Organization,	Utilize the examples of the various control points for narcotics to illustrate the capacity of technology at each point
Class 9 10/23/13	Medication Management Systems and Processes: Admission (Surescripts), Transfer of Level of Care, Discharge, Interaction with Community Pharmacy, Ordering, Transcription, Dispensing, Verification, Administration (Five Rights (Right Patient, Right Medication, Right Dose, Right Dosage Form, Right Time), Impact on Safety, , Monitoring, Managing Errors, Role of Technology	Step 1: Ordering Step 2: Dispensing Step 3: Monitoring
Class 10 10/30/13	Medication Management Systems and Processes 2: Technologies: Integration vs Interfaced, Barcodes, Re-Packaging Software Systems, Automation, Automated Dispensing Machines (ADMs), Security, Narcotic Control	
Class 11 11/6/13	Assessment 2: Didactic and Skill Practicum (10/16-10/30)	Take a narcotic from warehouse to patient
Class 12 11/13/13	The Future is Here and Management of Clinical Data: Computerized Practitioner Order Entry (CPOE): Obstacles, Benefits, Acceptance, ePrescribing Communication, Clinical Data Categories	Translating Data in to Clinical Decisions CPOE Troubleshooting Clinical Decision support (reports and resources – include Facts and comparisons, link to libraries)
Class 13 11/20/13	Informatics in the ER and Community: Emergency Department Systems, Verification of ALL Emergency Department orders, Previous Histories, SureScript data and current medication lists, Usage within Community Pharmacy, Community Pharmacy Automation: ScriptPro, AutoMed, Parata, Pharmacy Automated Systems, Impact on Community Practice, Community Pharmacy of the Future, Wireless Vital Sign Devices, Collection and Transmission, Future within Patient Centered Care, Patient Monitoring within Community Pharmacy	Transitions of Care (hospital send report to community, wireless monitoring from home health agency, safety initiatives)

Class 14 11/27/13	Thanksgiving Break	
Class 15 12/4/13	Presentations - Future Informatics / Where Do We Go From Here? Patient Centered Care, Decision Support Systems, Pharmacist Prescribing and Monitoring, Pharmacist Antibiotic Stewardship,	