

Request for Graduate Course Addition - Page 2

College: CITE

Department/Division: Computer Science

Alpha Designator/Number: IS/535

Provide complete information regarding the new course addition for each topic listed below. Before routing this form, a complete syllabus also must be attached addressing the items listed on the first page of this form.

1. FACULTY: Identify by name the faculty in your department/division who may teach this course.

Husnu Narman, Ph.D. (primary)
Cong Pu, Ph.D. (secondary)
Elias Majdalani Ph.D. (secondary)

2. DUPLICATION: If a question of possible duplication occurs, attach a copy of the correspondence sent to the appropriate department(s) describing the proposal. Enter "**Not Applicable**" if not applicable.

Not Applicable

3. REQUIRED COURSE: If this course will be required by another department(s), identify it/them by name. Enter "**Not Applicable**" if not applicable.

Health Informatics

4. AGREEMENTS: If there are any agreements required to provide clinical experiences, attach the details and the signed agreement. Enter "**Not Applicable**" if not applicable.

Not Applicable

5. ADDITIONAL RESOURCE REQUIREMENTS: If your department requires additional faculty, equipment, or specialized materials to teach this course, attach an estimate of the time and money required to secure these items. (Note: Approval of this form does not imply approval for additional resources.) Enter "**Not Applicable**" if not applicable:

Not Applicable

6. COURSE OBJECTIVES: (May be submitted as a separate document)

Please refer to the attached syllabus

Request for Graduate Course Addition - Page 3

7. COURSE OUTLINE (May be submitted as a separate document)

Please refer to the attached syllabus

8. SAMPLE TEXT(S) WITH AUTHOR(S) AND PUBLICATION DATES (May be submitted as a separate document)

Database Systems Edition: 11th (February 4, 2014)

Author: Carlos Coronel, Steven Morris

ISBN: 9781285196145

Database Processing: Fundamentals, Design, and Implementation 14th Ed. (July 26, 2015)

Author: David M. Kroenke, David J. Auer

ISBN: 978-0133058352

9. EXAMPLE OF INSTRUCTIONAL METHODS (Lecture, lab, internship)

Recorded Lecture (Online Course)

Lecture Slides

Assignments and exams

Discussion Boards

Request for Graduate Course Addition - Page 4

10. EXAMPLE EVALUATION METHODS (CHAPTER, MIDTERM, FINAL, PROJECTS, ETC.)

Midterm and Final Exam
Homework Projects
Discussion Board Posts
Final Project

11. ADDITIONAL GRADUATE REQUIREMENTS IF LISTED AS AN UNDERGRADUATE/GRADUATE COURSE

Not Applicable

12. PROVIDE COMPLETE BIBLIOGRAPHY (May be submitted as a separate document)

Health Informatics Data Analysis: Methods and Examples (Health Information Science), 1st ed, Dong Xu, May D. Wang, Fengfeng Zhou, Yunpeng Cai (Editors), Springer, ISBN-10: 3319449796, ISBN-13: 978-3319449791

Database Systems, Coronel, C. & Morris, S. Eleventh Edition, 2014. ISBN: 9781285196145

Database Processing: Fundamentals, Design, and Implementation, Kroenke, D. D., & Auer D., Fourteenth Edition, 2015 ISBN: 9780133058352

Data Driven Healthcare, How Analytics and BI are transforming the Industry, Laura B. Madsen, Wiley, ISBN: 9781118772218

Request for Graduate Course Addition - Page 5

Please insert in the text box below your course summary information for the Graduate Council agenda. Please enter the information exactly in this way (including headings):

Department:
Course Number and Title:
Catalog Description:
Prerequisites:
First Term Offered:
Credit Hours:

Department: Information Systems
Course Number and Title: IS 535 Applied Healthcare Databases/Tools
Catalog Description: To understand the logical and physical design of data stored and retrieved from relational databases, how it applies to healthcare, and how HIM professionals can effectively communicate business requirements.
Prerequisite: Graduate status
First year offered: Spring 2018
Credit Hours: 3



I'd rather attempt to do something great and fail than to attempt to do nothing and succeed.

~Robert H. Schuller

Course Title/Number	IS 535 – Applied Healthcare Databases/Tools
Semester/Year	Spring 2018
Days/Time	Online Course – No Meeting times or dates
Location	Online
Instructor	TBA
Office	TBA
Phone	
Email	
Office/Hours	By Appointment; Open communication via email at any time
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to http://www.marshall.edu/academic-affairs/policies/ . Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

Course Description from Catalog

To understand the logical and physical design of data stored and retrieved from relational databases, how it applies to healthcare, and how HIM professionals can effectively communicate business requirements.

Student Learning Outcome (Students will...)	Practiced by:	Assessed by:
<i>Be able to identify and define data elements and construct a data dictionary for a Health care application.</i>	Reading assignments, Homework	Homework, Projects, Midterm
<i>Be able to normalize data from a healthcare data set/setting environment.</i>		
<i>Be able to develop and entity relationship diagram (ERD) based on healthcare business requirements/end user needs..</i>		
<i>Be able construct Structured Query Language (SQL) statements for healthcare database definitions, manipulation, and data retrieval.</i>		
<i>Be able to apply the principles of information integrity, security, and confidentiality to a healthcare database. Additional, emphasis on confidentiality due to HIPPA requirements.</i>		
<i>Be able to identify issues with database systems that are unique to the healthcare environment.</i>		

Attendance Policy

Online class: Not applicable.

Required Texts, Additional Reading, and Other Materials	
<i>Healthcare Databases: A Simple Guide to Building and Using Them</i>	
Author	Alan Giles
ISBN	978-1857759723
Publisher	CRC Press
<i>Database Systems: Design, Implementation, & Management</i>	
Author	Carlos Coronel & Steven Morris
ISBN	9781285196145
Publisher	CRC Press
Pub. Date	2015

Other Materials
<ol style="list-style-type: none"> 1. Campbell, Robert J. "Database design: what HIM professionals need to know." Perspectives in health information management/AHIMA, American Health Information Management Association 1 (2004). 2. AHIMA. "Managing Copy Functionality and Information Integrity in the EHR." Journal of AHIMA 83, no.3 (March 2012): 47-49. <ol style="list-style-type: none"> a. http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_049377.hcs?p?dDocName=bok1_049377 b. http://csrc.nist.gov/news_events/hiipaa_june2012/day1/day1-b2_drode_integrity-protections.pdf 3. Eliason, B., Burke, J., & Hess, P. "Master Data Management in Healthcare: 3 Approaches" Health Catalyst <ol style="list-style-type: none"> a. https://www.healthcatalyst.com/master-data-management-in-healthcare-3-approaches 4. LeSuer, D. "5 Reasons Healthcare Data Is Unique and Difficult to Measure" Health Catalyst <ol style="list-style-type: none"> a. https://www.healthcatalyst.com/5-reasons-healthcare-data-is-difficult-to-measure 5. Dolins, S., Kero, R. "Data Managemet Challenges for U.S. Healthcare Providers" <ol style="list-style-type: none"> a. http://www.irma-international.org/viewtitle/32893/ 6. MITRE. (2015) "Eliciting, Collecting, and Developing Requirements" MITRE- Systems Engineering Guide <ol style="list-style-type: none"> a. http://www.mitre.org/publications/systems-engineering-guide/se-lifecycle-building-blocks/requirements-engineering/eliciting-collecting-and-developing-requirements

Course Requirements/Due Dates		
Discussion Board Posts		
Most weeks, there will be a discussion board post due. It will be based on the Healthcare Database: A Simple Guide to Building and Using Them, articles in relation to effective communication of business requirements/needs, and challenges of database management in healthcare.		
Homework: The homework assignments will utilize health care data sets.		
#	Description	Due beginning of:
1	Identification of Data Elements/Terminology	3 rd Week
2	Data Normalization	5 th Week
3	Data Dictionary	7 th Week
4	Database Modeling and Design	10 th Week
5	Data Definition Language SQL	11 th Week
6	Data Manipulation Language SQL	13 th Week
7	Data Query Language SQL	15 th Week
Mid-Term: Due by Midnight Monday of the 9th week of class.		
There will be a take home exam that will include multiple choice, t/f, and problem solving questions.		
Project Proposal (Due Monday Midnight 7th Week): Project Description, and proposed reports ideas.		
Project Rough-Draft (Due Monday Midnight 12th Week): Requires Project Description, Business Requirements, Data Dictionary, ERD Diagram, Two Sample Reports Descriptions/Outlines		
Final Project: Due by Midnight the last day of class.		
There will be a final project in where the student will elect a project or be given a project that utilizes a healthcare data setting. The project submission will include:		
<ul style="list-style-type: none"> • <i>Project Description</i> • <i>Business Requirements/End Use Requirements: KEY ELEMENT</i> • <i>Data Dictionary</i> • <i>ERD Diagram</i> • <i>Data Definition Queries</i> • <i>Two Sample Reports Needed and Accompanying Queries</i> 		

Grading Policy	
A	90-100%
B	80-89%
C	70-79%
F	Below 70%
Activities & Points	
15%	Discussion Board Posts
30%	Homework Assignments
10%	Mid-Term
10%	Project Proposal
10%	Project Rough Draft
20%	Final Project
Late Assignments will be deducted 10% for each day they are turned in late.	
100% credit will be given for completing all aspects of the assignment correctly. Any points deducted will have an accompanying explanation.	
10% extra credit can be earned on any assignment in which a student goes above and beyond the requirements or produces otherwise exceptional work.	

Note: The professor reserves to the right to make changes to this syllabus.

Course Schedule			
Week	Text Book*	Topic	Assignments (Monday at Midnight)
1	Chapter 1 & 2	Introduction; General Terminology, Systems, Models, Importance in Healthcare	2 nd week: Discussion Board Post
2	Chapter 3 & 6	Relational Model & Normalization	3 rd Week Discussion Board Post: HW #1
3	Chapter 4, 5, 6	Data Elements, Data Types	4 th Week: Discussion Board Post
4	Chapter 4	Business Requirements, Data Dictionary	5 th Week: Discussion Board Post 5 th Week: HW #2
5	Chapter 4	Database Modeling	6 th Week: Discussion Board Post
6	Chapter 4	Database Modeling (Give out Midterm)	7 th Week: HW #3 7 th Week: Project Proposal
7	Chapter 7, 9	Data Definition Language SQL	8 th Week: Discussion Board Post
8	Chapter 7, 9	Data Definition Language SQL	9 th Week: Midterm Due
9	Chapter 7	Data Manipulation Language SQL	10 th Week: HW #4 10 th Week: Discussion Board Post
10	Chapter 7	Data Manipulation Language SQL	11 th Week: Discussion Board Post 11 th Week: HW #5
11	Chapter 7, 8	Data Query Language SQL	12 th Week: Project Rough Draft
12	Chapter 7, 8	Data Query Language SQL	13 th Week: Discussion Board Post 13 th Week: HW #6
13	Article 2 of other Resources	Principles of Information Integrity, security, and confidentiality to a database (HIPPA, EHRS, HIEs)	14 th Week: Discussion Board Post
14	Thanksgiving Break!	Thanksgiving Break! No Reading Assigned	15 th Week: Discussion Board Post 15 th Week: HW #7
15	Articles 3	Issues with Database Management in Healthcare	16 th Week: Discussion Board Post
16	Finals Week		Exam Day: Final Project Due (1 point extra credit for each day a complete project is turned in early)

* TextBook for listed Chapters: *Database Systems: Design, Implementation, & Management*