IS 467
Senior Projects in Health IT

Spring 2017– UMBC Class Number xxxx/yyyy, Section zz

SYLLABUS

- **Class Time**: Oneweekday, timetobearranged a.m.
- **Class Location**: ITE 459
- **Professor:** Dr. Koru
- **Contact:** Email is the preferred method for course-related communication. Please use "`IS 467`" as the subject line and send an email to `gkoru@umbc.edu`.
- **Office hours:** Before or after the class in the classroom. If there is an issue that requires extra discussion time, please email Dr. Koru to set up an appointment.
- **Required text:** *None*
- **First class day**: Jan 30, 2017
- **Last class day**: May 16, 2017
- **Final project reports/presentation**: May 16, 2017

  The students should also check the registrar's web site for other important dates regarding registrations. Note that registration is not optional, it is required.

1 Description

IS 467 allows students to further explore the health information technology (IT) areas of their interest by completing a senior project. The senior project can be about the application of concepts, ideas, or research findings OR a small and self-contained research project itself. Applications often involve development of some prototype software programs. Research projects often involve literature reviews, systematic reviews, interviews, surveys, etc. The nature and scope of the work will be decided based on the student's background and the interest areas of the professor and student. The course plays a role in the Health IT UGC by engaging students in a semester-long study of a particular selected topic in Health IT and achieving depth.

2 Course Nature

The course is a regular three-credit course, however, its content will change from one student to another. For this reason, the course is called a "Senior Project Course" course. Since the course is a project course, the class meeting times will be the regular project meeting times.

Due to the exploratory nature of applied and research project topics, the students should expect a non-linear growth in their Health IT knowledge. The students will be exploring some topics less known or less familiar to them. Please do not hesitate to ask professor about that or do some quick search to learn about it. This is quite normal in an interdisciplinary course with diverse student population in terms of academic backgrounds.

3 Course Goals

- Develop in-depth knowledge of one specific project topic
- Start developing a broad knowledge of the applications of biomedical informatics and understand the challenges and opportunities associated with adopting and meaningfully using Health IT
- Establish familiarity with the related literature, terminology, and concepts which will facilitate communication with the other biomedical informatics professionals

4 Academic Integrity

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they will not be tolerated. Academic misconduct could result in disciplinary action that may include, but is not limited to a grade of 0 on the relevant assignment, failure of the entire course, suspension, or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory. Every student should read and fully understand the information given at http://www.umbc.edu/integrity

Academic dishonesty also includes interfering with another student's work or aiding another student to commit academic dishonesty. Students should be particularly careful about collective actions that are academically dishonest but might feel alright because others participate in them. Do not give in to peer pressure.

5 Class Format

Classes will be only held on the pre-arranged dates. Due to the nature of the senior project, the class format is different from the traditional class format where the professor gives information and the students simply repeat this information in the final exam. The class is interactive; students will ask and receive questions, have class discussions, work on small exercises and assignments. Class discussion and participation is strongly encouraged and advised. A portion of the class grade will be based on participation. The participation grade will be assigned at the end of the semester.

6 Senior Project

Believe those who are seeking the truth; doubt those who find it. – **Andrè Paul Guillaume Gide**

There are some things that you know to be true, and others that you know to be false; yet, despite this extensive knowledge that you have, there remain many things whose truth or falsity is not known to you. We say that you are uncertain about them. You are uncertain, to varying degrees, about everything in the future; much of the past is hidden from you; and there is a lot of the present about which you do not have full information. Uncertainty is everywhere and you cannot escape from it. – **Dennis Lindley, Understanding Uncertainty**

As observed by many great minds who came before us, in fact, applied or research senior project work will be more about dealing with uncertainty than it is about dealing with certainty. As UMBC graduates, it is likely that you will encounter new situations or unknowns in your career. Therefore, it is greatly beneficial to develop an inquiring mind and approach. It is important that students take a topic and explore that topic in depth. Both IT and health IT industry demand such professionals.

The course project in IS 467 prepares our students to respond to information seeking, knowledge gathering, and decision making needs of the health organizations by allowing them to explore a topic of **their** interest chosen by **themselves** during the semester. Within the first two weeks of the semester, the students should decide on a project plan. This document will be signed by the student and the professor.

Motivation Behind Senior Project: On many science and technology issues, it is greatly beneficial to develop an inquiring mind and approach. Students might find it interesting that, in many healthcare organizations,

adoption of technology often took place without having an appropriate understanding about the context, requirements, and effectiveness. Healthcare domain, even though it tried to take a cautious approach, ended up not being an exception to this general trend. There were several reasons:

- Vendors effectively and aggressively advertised and market their products
- Governments encouraged technology adoption with little preparation
- Consulting firms published white papers without appropriate background and training
- In an interdisciplinary area, there was a lack of individuals who had knowledge on both health and technology. This knowledge gap contributed to typical project risks such as communication difficulty.

In this environment, however, healthcare industry desperately needs reliable information, which requires taking an objective view, asking right questions, collecting information, and appropriately evaluating and synthesizing the information. The more knowledge gathered, questions asked, evidence collected, the more we can increase the evidence base on Health IT ultimately leading to better decisions.

The senior project is, in fact, tightly related to a real-life project on which students may work on after graduation which may be including development, or searching, categorizing, synthesizing, and reporting information with the ultimate purpose of enabling and supporting decision making in the area of Health IT. Such projects frequently take place in real life healthcare organizations. There is a real need in the Healthcare industry for Health IT professionals who can help making right decisions benefiting the organization. The email excerpt below is just one example sent to the professor recently.

> *We are seeking a highly motivated student with a background and strong interest in Health Care Information Technology, for a summer internship program. The goals of the internship will be to capture and report on trends occurring within Health IT; create and document reports on key players, influencers, and contributors to Health IT; and document emerging systems within Health IT and their potential impact on the community.*

This excerpt, understandably, does not talk about the particular senior project, but it is followed by the following two items in job qualification:

- *Writing Sample: Essay or course report authored by the applicant*
- *Written reference from a minimum of one (1) professor*

By conducting a senior project, the students will be better positioned for taking jobs in the health IT industry.

7 Student Support Services

UMBC is committed to eliminating discriminatory obstacles that disadvantage students based on disability. Student Support Services (SSS) is the UMBC department designated to receive and maintain confidential files of disability-related documentation, certify eligibility for services, determine reasonable accommodations, develop with each student plans for the provision of such accommodations, and serve as a liaison between faculty members and students regarding disability-related issues. If you have a disability and want to request accommodations, contact SSS in the Math/Psych Bldg., Room 213 or at 410-455-2459. SSS will require you to provide appropriate documentation of disability. If you require accommodations for this course, make an appointment to meet with me to discuss your SSS-approved accommodations.

8 Class Attendance

To the extent that class meeting time is needed and decided, class attendance is required to receive a passing grade for this course. Lack of attendance will decrease the class participation grade. If you have to miss a particular session, e-mail Dr. Koru in advance and ask how you can compensate. In case of inclement weather, check the main UMBC web page (http://www.umbc.edu) to see if the classes are cancelled or not.

9 Grading

Grading will be based on letters:

- A: Excellent performance
- B: Good performance
- C: Average performance
- D: Below average performance
- F: Failed

Violation of appropriate academic conduct and civilities or lack of attendance can result in significant grade adjustments.

10 Make-up Assignments and Incompletes

In general, there are no make up assignments. Completion of senior project requirements brings credit only if the completion is on time. If a student misses an assignment, he/she will receive a grade of 0. The students should make all their plans to submit their reports on time.

Make ups are only given in very serious situations (e.g. severe/unforeseen illnesses, accidents, deaths in family) or in the case of tremendous difficulties (e.g. a conflicting jury duty in a court) with the official documentation. Examples of invalid excuses are work reasons, other classes, travels, other exams, etc.

Note: The explanations in this syllabus only apply to IS 467 – Section zz, which has a UMBC class number xxxx/yyyy taught by Dr. Koru in Spring 2017. Dr. Koru designates the course content, policies, assignments, and the grading system. These components are likely to be different in other courses at UMBC, or even in the IS 467's taught in other semesters or by other professors in the same semester.