

BMI 516/BMI 616 Standards and Interoperability in Healthcare

CREDITS: 3.0

TERM: Summer – Hybrid course

This course will explore the details of healthcare information technology (HIT) interoperability and standards. The evolution of the use information technology for healthcare applications will be considered, as will the the associated evolution in the need for integrating healthcare information systems across disparate organizations, healthcare disciplines, and technologies. The value proposition of a standards-based approach to integration will be presented. Students will learn the process of HIT integration projects, and how that parallels the development process of interoperability standards. The course will present an in depth look at standards critical to HIT interoperability – HL7 v2, HL7 v3 RIM, CDA, and SNOMED – and at the use of those standards in national regulations and industry-wide efforts such as IHE. Students will gain experience in navigating through standards documents and tools. Students will utilize the skills and knowledge gained to design a standards-based interoperability project addressing a real-world need.

INSTRUCTORS:

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TEXTBOOK: Tim Benson, **Principles of Health Interoperability: HL7 and SNOMED**, Second edition. Springer 2012 978-1-4471-2800-7.

Additional reading material will be available on the Sakai course site.

STUDENT LEARNING GOALS: At the completion of the Interoperability and Standards course, students should be able to:

- Describe the benefits of standards-based HIT interoperability

- Identify the resources necessary for an HIT integration project
- Utilize appropriate HIT standards in an integration project
- Be able to navigate through US national HIT interoperability standards
- Understand the policy issues in intra- and inter-institutional health data exchange

COURSE MATERIAL

Pre-Campus, June30 – August 17, 2014

Prior to coming to campus, the student will be responsible for weekly lectures, readings and quizzes. In addition, each student will be asked to prepare a brief presentation on a standards- or interoperability-related organization. Finally, preliminary preparation of a term project should be completed prior to the on-campus activities.

Module	Topics
1	History and Scope of Healthcare Interoperability and Standards. Quiz due July 13
2	HL7 Messaging standards: HL7 v2; HL7 V3 Reference Information Model (RIM). Quiz due July 20.
3	Document standards: HL7 Clinical Document Architecture; CDA Implementation Guides: CCD and Derivatives. Quiz due July 27.
4	Vocabulary standards: LOINC and SNOMED. Quiz due August 3.
5	Standards for Quality, Research, and Decision Support. Quiz due August 10.
6	Making Interoperability a Reality: Architectures and Initiatives. Quiz due August 17.

On Campus, August 18 – August 22, 2014

Location: BICC 124

Class times 9-12 and 1:30-4:30 daily will consist of case-based lectures and discussions, laboratories, as well as brief student presentations as described below. Students should bring a laptop for the laboratories, if possible.

Post-Campus, August 23 – September 12, 2014

The student is to complete the class project which will be due on Friday, September 5.

CLASS PRESENTATION: Students will be responsible for a 10-15 minute PowerPoint in-class presentation on one HIT standards- or interoperability-related organization. Assignment of the organization will be through Sakai.

CLASS PROJECT: Students will be responsible for a term project that addresses a significant interoperability issue, preferably from their current work environment. The project will be presented as a 6-8 page written report. A problem statement and outline shall be submitted prior to coming to campus, and the final report is due by Friday, September 5, 2014. The project should consist of:

1. An introduction
2. A specific problem statement
3. One or more storyboards that illustrate some or all of the interactions with the IT systems.
4. A look at standards currently available to help solve the problem
5. An analysis of the gaps in standards that would need to be filled in order to solve the problem.

Note that this project is NOT just a review of the literature. The review that you will do is of standards that help solve your specific problem.

GRADING: Students will be graded based on their term project, final exam, and their participation when on campus.

Quizzes:	32.5%
In-class presentation:	10%
Term project:	32.5%
Participation in in-class discussions:	25%

The term project will be evaluated on a clear description of the interoperability problem and use case, identification of appropriate standards to be applied to the problem, demonstration of an understanding of the content of the selected standards, and discussion of the implementation aspects of the project beyond the selection of standards.

Graduate Studies in the OHSU School of Medicine is committed to providing grades to students in a timely manner. Course instructors will provide students with information in writing at the beginning of each course that describes the grading policies and procedures including but not limited to evaluation criteria, expected time needed to grade individual student examinations and type of feedback they will provide.

Class grades are due to the Registrar by the Friday following the week of finals. However, on those occasions when a grade has not been submitted by the deadline, the following procedure shall be followed:

- 1) The Department¹ /Program Coordinator² will immediately contact the Instructor requesting the missing grade, with a copy to the Program Director and Registrar.
- 2) If the grade is still overdue by the end of next week, the Department¹ /Program Coordinator² will email the Department Chair directly, with a copy to the Instructor and Program Director requesting resolution of the missing grade.
- 3) If, after an additional week the grade is still outstanding, the student or Department¹ /Program Coordinator² may petition the Office of Graduate students for final resolution.

¹ For courses that are run by a specific department.

² For the conjoined courses (course number is preceded by CON_ that are run by Graduate Studies.

ACADEMIC HONESTY: Students are expected to be familiar with the Professional Conduct Policy for Graduate Programs (available at <http://www.ohsu.edu/ohsuedu/academic/som/dmice/students.cfm>). While interaction between

students is encouraged, all submitted work must be the work of the student. Specific behaviors prohibited by this policy include:

- Providing or receiving unauthorized assistance in course work including:
 - Submitting work (including papers, examinations, homework, and computer code) prepared by someone else as one's own work,
 - Obtaining a copy of an examination prior to the assigned date and time for that examination,
 - Using notes or other materials (books, calculators, cell phones, computers) not approved by the instructor during an examination,
 - Copying from or giving information to another student during an examination,
 - Having someone else take a course, do homework, write papers, or take an examination in one's place,
 - Collaborating with others on assignments or take-home examinations when the instructor requires individual work,
 - Submitting a paper or project prepared for another class as new work without the consent of the instructor;
- Engaging in plagiarism – representing the work of another as one's own. Specifically this includes copying material from another source (including books, journals, and web pages) without use of quotation marks and/or acknowledging that source by citation.

Episodes of unacceptable conduct according to this policy will be reported to the DMICE Professional Conduct Committee which will determine sanctions. In addition, plagiarism or cheating will result in a grade change for the assignment involved.

COPYRIGHT INFORMATION: Every reasonable effort has been made to protect the copyright requirements of materials used in this course. Class participants are warned not to copy, audio, or videotape in violation of copyright laws. Journal articles will be kept on reserve at the library or online for student access. Copyright law does allow for making one personal copy of each article from the original article. This limit also applies to electronic sources.

To comply with the fair use doctrine of the US copyright law, Sakai course sites close three weeks after grades are posted with the Registrar. Please be sure to download all course material you wish to keep before this time as you will have no further access to your courses.

DMICE COMMUNICATION POLICY:

1. If the syllabus directs the student to contact the TA before contacting the instructor, the student should do so. Otherwise, the student should contact the instructor and allow 2 business days (not including weekends) for a response.
2. If the student does not receive a response from the instructor within 2 business days, s/he should contact the TA (if there is one). When contacting the TA s/he should cc the instructor and Diane Doctor at doctord@ohsu.edu.
3. If a student does not receive a response from the TA within 1 business day (not including weekends), s/he should contact Diane Doctor at doctord@ohsu.edu and cc the instructor and the TA.

4. If Diane does not reply within 1 business day (not including weekends), the student should contact Andrea Ilg at ilgan@ohsu.edu.
5. Students having difficulties with Sakai should contact the Sakai Help Desk at sakai@ohsu.edu or at (877) 972-5249. Sakai help is available M-F from 8am to 10-pm and weekends from Noon to 5pm. Do not contact the instructor.

STUDENT ACCESS: OHSU is committed to providing equal access to qualified students with disabilities. Student Access determines and facilitates reasonable accommodations, including academic adjustments and auxiliary aids, for students with documented disabilities. A qualified student with a disability is a person who meets the academic and technical standards requisite to admission or participation in a particular program of study. As defined by the Americans with Disability Act (ADA), a person with a disability has a physical or mental impairment that substantially limits one or more major life activities of the individual. This may include, but is not limited to, physical conditions, chronic health issues, sensory impairments, mental health conditions, learning disabilities and ADHD. Student Access works with students with disabilities from all of OHSU's educational programs and at each campus.

Each school has an assigned Program Accommodation Liaison (PAL), who acts as an "in-house" resource for students and faculty concerning access issues for students with disabilities. The PAL works in collaboration with Student Access to implement recommended accommodations for students with disabilities.

It is recommended that you contact Student Access to consult about possible accommodations if you a) received disability accommodations in the past, b) begin experiencing academic difficulties, and/or c) are given a new diagnosis from your healthcare provider.

Learn more about Student Access:

Phone: 503 494-0082

Email: studentaccess@ohsu.edu

Website: www.ohsu.edu/student-access

USE OF SAKAI: This course will have an online component, which can be accessed through Sakai, OHSU's online course management system. For any technical questions or if you need help logging in, please contact the Sakai Help Desk.

Hours: Sakai Help Desk is available Mon – Fri, 8 am – 10 pm and weekends and holidays 12 pm – 5 pm

Contact Information:

(Toll-free) 877-972-5249

(Web) <http://atech.ohsu.edu/help>

(Email) sakai@ohsu.edu