Compilation - 9-15-18

Syllabus for Introduction to Health Informatics Fall 2018

Instructor:	Allen Flynn, PharmD, PhD (Information Science) Assistant Professor, Department of Learning Health Sciences University of Michigan Medical School Office: 1161-C (11th Floor) North Ingalls Building (NIB) @ 300 North Ingalls Email: ajflynn@umich.edu (mailto:ajflynn@umich.edu) Office Phone: 734.615.0839
Graduate Student Instructor:	Brad Iott, 3rd year Doctoral Student (Information Science & Public Health) Schools of Information and Public Health University of Michigan Email: biott@umich.edu (mailto:katjames@umich.edu)
Class Meeting Days and Times:	Mondays, 4:30p-6:00p Wednesdays, 4:30p-6:00p
Location:	1655 SPH I at the School of Public Health Map (https://umich.instructure.com/courses/282840/pages/map)
Course Materials:	ALL MATERIALS PROVIDED VIA CANVAS or DURING CLASS Readings (https://umich.instructure.com/courses/282840/pages/readings) Required Textbook

(https://umich.instructure.com/courses/282840/pages/textbook) (available FREE as a PDF)

Policies Fall 2018

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No Do-over Policy (https://umich.instructure.com/courses/282840/pages/no-do-over-policy)

Our Policy on Policies

We adhere to a series of course policies, which are listed above.

These course policies are intended to:
(a) clearly set expectations for both students and instructors,
(b) promote fairness,
(c) foster interpersonal respect at all times,
and (d) uphold diversity, equity, and inclusion.

Links to specific course policies are provided immediately above.

Your course instructors appreciate feedback on these course policies!

See us to discuss these course policies anytime.

Academic Integrity Policy

Rackham Academic and Professional Integrity Policy
(http://www.rackham.umich.edu/policies/academic-policies/section11) Office Hours

(https://umich.instructure.com/courses/282840/pages/office-hours)

This course follows the Rackham Academic and Professional Integrity Policy.

While being sure to account for all of the guidance in Rackham's policy, which is linked above, students are advised to pay particular attention to the following:

• Make sure all of your work is your own.

• Always attribute others' ideas to them.

• Do not copy other people's work, and especially not without attribution! Give others the credit they deserve!

• Rackham policy applies to all instances of plagiarism or cheating.

• Grades and academic standing may be negatively impacted by transgressions of Rackham's policies.

Contact the course instructions with any questions you have about academic integrity.

Accommodations for Students with Disabilities

Services for Students with Disabilities (https://ssd.umich.edu/)

If you need an accommodation for a disability, please let your instructor know at your earliest convenience.

Certain aspects of this course, the assignments, the in-class activities, and the way we teach can be modified to facilitate your participation and progress.

As soon as you make us aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD, link above, tel: 734-763-3000) to help us determine appropriate accommodations.

SSD typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form.

Your instructors will treat any information you provide in this regard as private and confidential.

Assignments & Grading Fall 2018

One Page Papers (https://umich.instructure.com/courses/282840/pages/one-page-papers) EHR Lab Exercises (https://umich.instructure.com/courses/282840/pages/mostly-in-class-ehr-lab-exercises) Midterm Exam (https://umich.instructure.com/courses/282840/pages/midterm-exam) Group Project

(https://umich.instructure.com/courses/282840/pages/group-project) Participation (https://umich.instructure.com/courses/282840/pages/participation) Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Five Things are Graded

There are five graded assignments or elements that result in the final grade for this course.

1. One Page Papers (40%, that is, 8% each x 5 papers)
2. Mostly In-class EHR Lab Exercises (10%, that is, 2.5% each x 4 labs)
3. Midterm (20%)
4. Group Project (20%)
5. Participation (10%)

How Final Grades are Calculated

Final grades are determined by a weighted average
over all five graded assignments or elements above
using a 4.0 “letter-grade” scale (A=4.0).

Numeric or categorical scores for assignments or elements
are **first** converted to letter grades, using Rackham's scale below, and only then averaged.
We only ever round these averages **up** if they are **above** the midpoint at the 2nd or hundredths place.
We never round them down!

A+ = 4.3, A = 4.0, A- = 3.7
B+ = 3.3, B = 3.0, B- = 2.7
C+ = 2.3, C = 2.0, C- = 1.7

Here is an example of this type of Final Grade Calculation:

1. One Page Papers (A- = 3.7 for 40%)
2. Mostly In-class Lab Exercises (A = 4.0 for 10%)
3. Midterm (B+ = 3.3 for 20%)
4. Group Project (A = 4.0 for 20%)
5. Participation (A- = 3.7 for 10%)

Final Numeric Grade = (0.4 x 3.7) + (0.1 x 4.0) + (0.2 x 3.3) + (0.2 x 4.0) + (0.1 x 3.7) = **3.71**
Final Letter Grade for a score of 3.71 = **A-**

Note: By only rounding up **above** the midpoint at the 2nd or hundredths place we mean precisely the following:

A Final Numeric Grade of 3.66 will be scored as 3.70 (A-) but a grade of 3.65 will be scored as 3.65 (B+).

Rounding of Final Numeric Grades to Assign Final Letter Grades

This student-friendly rounding up of final grades is intended to ensure that final numeric grades very near a numeric grade cutoff are interpreted as the higher letter grade at that cutoff, and not as the lower letter grade. This student-friendly rounding up essentially means that final grades fit in these numeric ranges:

A+ = 4.01 to 4.30, A = 3.96 to 4.00, A- = 3.66 to 3.95
B+ = 3.26 to 3.65, B = 2.96 to 3.25, B- = 2.66 to 2.95
C+ = 2.26 to 2.65, C = 1.96 to 2.25, C- = 1.66 to 1.95

No Curve!

NO "curve" is used when calculating final grades.
Final grades are independently calculated for every student and
are NOT calculated relative to the overall performance of others in the course.

Attendance Policy

Mostly In-class EHR Lab Exercises (https://umich.instructure.com/courses/282840/pages/mostly-in-class-ehr-lab-exercises)
Midterm Exam (https://umich.instructure.com/courses/282840/pages/midterm-exam) **Group Project (https://umich.instructure.com/courses/282840/pages/group-project)** **Participation (https://umich.instructure.com/courses/282840/pages/participation)**

We do not take attendance in class, however:

Students are strongly encouraged to attend and participate in all class sessions.

We understand that sometimes it is not possible to attend class.

Attendance Directly Effects your Performance in the Class

Mostly In-class EHR labs must be completed by all students even if they miss the EHR lab sessions scheduled for **October 3 and October 10, 2018**. See the Mostly In-class EHR Lab Exercises page at the link above for more details.

Students are required to inform the instructors **IN ADVANCE** by email if they will they will miss the scheduled **Midterm Exam on Wednesday October 17, 2018**. See the Midterm Exam page at the link above for more information about that.

Students are required to inform the instructors **IN ADVANCE** by email if they will they will miss one or both of the two scheduled Group Project Week class sessions on **December 3 and December 5, 2018**. Participation in Group Project Presentations and in producing Written Reflections on

another group's project is a required part of the course. See the Group Project page at the link above for more details.

10% of the final course grade is a participation grade.
See the Participation page at the link above for more details.

Semester Calendar Fall 2018

Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

THIS CALENDAR IS SUBJECT TO CHANGE

Weeks that are underlined = one page paper weeks

Week 1	September 5	**Introduction to the Course** - What is Health Informatics (HI)? • Starting with a Fundamental Theorem • Why now is a very interesting time to study this	Flynn
Week 2	September 10	**Domain Lecture** - Health Information Infrastructure and Learning Health Systems • Discuss the Fundamental Theorem • Kickoff the One Page Pager assignment • What does it mean to take an infrastructural perspective on HI? • What are learning health systems and what information infrastructure do they need? • What is the learning cycle model and why is it important in HI?	Flynn
Week 2	September 12	**Key Concepts Lecture** - Computation, Learning, & AI • What is (software) code? • Some different meanings of "Artificial Intelligence" (AI) • What is the branch of AI called Machine Learning about?	Flynn
Week 3	September 17	**Domain Lecture** - Biomedical Research	Handelman
EXTRA!	September 17 7:00-8:30 PM	Try out some existing health APIs! → Learn Why APIs are a Useful Integration Technology!	Flynn & Iott

Week 3	September 19	**Key Concepts Lecture** - On Automation • What are some ironies of automation? • What is known about human trust in automation?	Flynn
Week 4	September 24	**Domain Lecture** - Clinical Health Informatics	McCabe
Week 4	September 26	**Domain Lecture** - Consumer Health Informatics	Klasnja

TWO ONE-PAGE PAPERS DUE IN SEPTEMBER

STUDENTS SELF REPORT AND SELF GRADING FOR PARTICIPATION IN SEPT

Week 5	October 1	**Key Concepts Lecture** - Introducing EHRs • What is an EHR system? • What problems do EHRs solve? • What are some challenges that come from using EHRs? • How might EHRs evolve in the future?	Grimme Sergi Flynn
Week 5	October 3	**In-class Labs** - EHR lab #1 and EHR lab #2	Flynn & Iott
Week 6	October 8	**Domain Lecture** - Public Health Informatics	Dombkowski
Week 6	October 10	**In-class Labs** - EHR lab #3 and EHR lab #4	Flynn & Iott
Week 7	October 15	FALL STUDY BREAK - NO CLASS per UM ACADEMIC CALENDAR	~
Week 7	October 17	**Midterm HI Foundations Exam on Domains, Key Concepts, and EHRs**	~
Week 8	October 22	Data Week - Key Types of Health Data	Bochinski / Flynn
Week 8	October 24	Natural Language Processing	Vydiswaran
Week 9	October 29	Standards Week - Standards in Health IT	Flynn

EXTRA!	October 29 7:00-8:30 PM	Try out some RDF tools! → Learn Why RDF is a Useful Standard Data Interchange Format!	Flynn & Iott
Week 9	October 31	Health Information Exchange	Pletcher

TWO ONE-PAGE PAPERS DUE IN OCTOBER

Week 10	November 5	Design Week - A Process-oriented Approach to User Experience (UX) Design in HI	Rampton
Week 10	November 7	Human Computer Interaction	Marcu
Week 11	November 12	Health Equity & Policy Week - Health Equity and HI	Veinot
Week 11	November 14	Federal Health IT Policies of Interest	Iott
Week 12	November 19	Decision Support Week - Decision Support Systems in HI	Flynn
Week 12	November 21	EVE OF THANKSGIVING - NO CLASS per UM ACADEMIC CALENDAR	
Week 13	November 26	Evaluation Week - Evaluation of Health IT	Friedman
Week 13	November 28	Evaluation Scenario	Flynn

ONE ONE-PAGE PAPER DUE IN NOVEMBER

Week 14	December 3	**Group Project Week** - Student Group Project Presentations, Part A	Student Groups!
Week 14	December 5	Student Group Project Presentations, Part A	Student Groups!

Week 15	December 10 (Final Session)	**Knowledge Management Week** - Large Scale Computable Health Knowledge Infrastructures • Current Decision-Support Paradigms • The Knowledge Grid Effort and its Greater Context • Inception of the Computable Biomedical Knowledge Community • Vision of the Future of Knowledge Sharing for Health • WRAP UP: Redux - What is Health Informatics?	Flynn

Communication Policy

Office Hours (https://umich.instructure.com/courses/282840/pages/office-hours) **Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)**

Email and Canvas Communication Policy

For Your Part as a Student in the Course:

Email and/or Canvas Announcements will be used to communicate important messages to all students throughout the course semester.

You are encouraged to set up Canvas to send you emails of the Canvas Announcements for the course. Be sure to check that email sent from the instructors or from the course Canvas site is not inadvertently filtered into your junk email folder or deleted.

Students are expected to check for course emails and Canvas Announcements at least once a day, Monday through Friday, throughout the semester to ensure that emails and Canvas Announcements from the course instructors are read and responded to in a timely manner.

Note: It is not uncommon for emails or Canvas Announcements to be sent by the instructors to students on Thursdays or on Fridays before 5:00 PM.

For Our Part as Course Instructors:

Your emails to the instructors WILL receive priority attention!

This means that your email to us will be acknowledged in no more than 24 hours if it is received between

the hours of Mondays starting at 8:00 AM through Fridays before 11:00 AM.

To assist us, it helps if you begin the subject line of all course-related emails with: **Intro To HI Course**.

Emails sent after Friday at 11:00 AM or over the weekend may NOT receive a response until the end of the business day on the following Monday.

Because not all email gets through to its intended recipients, if 24 hours elapses and you have still not received a response to an email, we apologize in advance and ask that you please send your email again and/or contact us directly by other means, e.g., telephone.

Course Description Fall 2018

Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

This course provides a survey of the field of Health Informatics.

The first half of the course introduces students to key concepts in the field and puts a focus on five major health informatics domains: 1) Health Information Infrastructure, 2) Biomedical Research Informatics, 3) Clinical Health Informatics, 4) Consumer Health Informatics, and 5) Public Health Informatics.

The second half of the course is topic-driven and focuses on a variety of relevant topics and methods that pertain to the field of health informatics. These include: Data, Standards, Design, Health equity, Policy, Health IT Management, Evaluation, and Computable Knowledge Management.

During the course, students will have an opportunity to work with a functioning Electronic Health Record (EHR) system that is purpose-built for education.

Additional extra hands-on opportunities to further explore relevant technologies and contemporary methods will be provided during the semester.

Diversity, equity and inclusion (DEI) policy

Defining DEI (https://diversity.umich.edu/about/defining-dei/%C2%A0) Expect Respect (https://expectrespect.umich.edu/)

Across the University of Michigan, and during every moment of the Introduction to Health Informatics course, our dedication to academic excellence for the public good is inseparable from our commitment to diversity, equity and inclusion.

It is central to our mission as an educational institution to ensure that each member of our community has full opportunity to thrive in our environment, for we believe that diversity is key to individual flourishing, educational excellence and the advancement of knowledge.

As members of the University of Michigan community, our policy is expressed in the following three interrelated commitments:

We commit to increasing diversity, which is expressed in myriad forms, including race and ethnicity, gender and gender identity, sexual orientation, socioeconomic status, language, culture, national origin, religious commitments, age, (dis)ability status and political perspective.

We commit to working actively to challenge and respond to bias, harassment, and discrimination. We are committed to a policy of equal opportunity for all persons and do not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status.

We commit to pursuing deliberate efforts to ensure that our campus is a place where differences are welcomed, different perspectives are respectfully heard and where every individual feels a sense of belonging and inclusion. We know that by building a critical mass of diverse groups on campus and creating a vibrant climate of inclusiveness, we can more effectively leverage the resources of diversity to advance our collective capabilities.

Extra Session Policy Fall 2018

Extra Session on APIs (https://umich.instructure.com/courses/282840/pages/extra-session-on-apis)
Extra Session on RDF (https://umich.instructure.com/courses/282840/pages/extra-session-on-rdf)
Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Extra Sessions are Truly Extra and Not Mandatory

During the semester we will have two extra sessions on very important technically-oriented topics.

We hold these sessions on Monday evenings starting at 7:00pm.

We do this in part to make up for "lost" sessions due to Fall Break and Thanksgiving.

We also do this to provide you with additional value from the course.

However, these sessions are truly extra. Attendance is **NOT** required but is **OPTIONAL**.

Material covered in Extra Sessions will not be included in any graded work!

What is the Goal of the Extra Sessions in the Course?

The goal of the two extra sessions is to provide a **hands-on experience** with fast-evolving technologies that are rapidly changing the software development landscape.

All students can benefit from experimenting with certain new technologies that are making large impacts presently on health IT development and health informatics.

Grade Appeals Policy

Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Timeliness is Important When Appealing a Grade

Regular feedback on graded assignments and timely resolution of any grading concerns is helpful for student learning and an overall positive class experience.

Therefore, students are encouraged to discuss any assignment grade concerns with the Instructor within two weeks of the grades being posted on Canvas.

Similarly, any concerns and grievances related to the overall course grades should be raised by contacting the Instructors within two weeks of the course grades being posted on Wolverine Access at the end of the semester.

How Grade Disputes are Resolved

For this course, grade disputes will initially be handled within the Department of Learning Health Sciences (DLHS) of the University of Michigan Medical School.

After the student has had a discussion with the Instructor for the course, then there is an opportunity for a second look at a grade by another DLHS faculty member who has appropriate expertise for resolving grade disputes.

If the student and two faculty are not able to come to an agreement about the grade dispute, then the Associate Chair for Educational Programs or his/her assigned designee (e.g., the HILS Associate Program Director) will adjudicate the grade dispute.

Per Rackham's Academic Dispute Resolution Process, if the concern is still not resolved after the process above has unfolded at the department level, then the student may seek a formal resolution conference with the Medical School's Rackham Resolution Officer.

See http://www.rackham.umich.edu/policies/academic-dispute-resolution (http://www.rackham.umich.edu/policies/academic-dispute-resolution) for where the contact information can be found for the current Rackham Resolution Officer.

Group Project Fall 2018

Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Three Group Project Options

There are three different options for completing the group project:

OPTION 1: Scholarly Group Paper
Write about a Health Informatics Topic of Interest not covered in the course

OPTION 2: Professional Group Interview & Report
Interview an expert on a topic or role that is of relevant to the course

OPTION 3: Group Programming of a Biomedical Knowledge Artifact
Use JavaScript to encode, test and document some biomedical knowledge

Formation of Student Groups

Student groups of 4 (minimum) or 5 (maximum) students will be selected using the results of a short online interest survey that students will fill out towards the end of September.

Every effort will be made to assign students to their most preferred Option and to a Topic that is of interest to them.

Group assignments will be announced in October.

The Four Parts of the Group Project Assignment

The Group Project in the Introduction to Health Informatics course
counts for 20% of the final course grade.
It has four parts:

1. One page Topic Description or Project Plan
(2% of final course grade)
2. Paper, Report, or Working Code with Documentation

(10% of final course grade)

3. Eight-minute Presentation to the Class

(5% of final course grade)

4. Written Reflections on Another Group's Class Presentation

(3% of final course grade)

Option 1: Scholarly Group Paper

Write a group paper on a "hot topic" of interest in health informatics that is not already well covered in the course.

• 1 page topic description due Oct 23, 11:59 pm (this allows you to check your topic with the Instructors)
• 5 to 7 pages (not counting references) due Nov 18, 11:59 pm
• Follow outline: Introduction, Background/History, Importance/Significance, Future/What to Expect
• 4 slides to be delivered by your group in class on either Nov 22nd OR

Type 2 Project: PROFESSIONAL INTERVIEW & REPORT-OF-RELEVANCE to the COURSE

Report from a group interview with a non-University of Michigan health informatician

• 1 page topic description due Oct 23, 11:59 pm (this allows you to let your Instructors know who will be interviewed beforehand)
• 5 to 7 page report, including list of questions asked of interviewee due Nov 18, 11:59 pm
• Written report must include biographical information about the interviewee (1 page)
• Written report must include a summary of interviewee responses with specific comments that relate interviewee responses directly to course topics
• 4 slides to be delivered by your group in class on Nov 22nd as a Lightning Presentation

Type 3 Project: TECHNICAL CODING OF BIOMEDICAL KNOWLEDGE & WRITE-UP OF ITS PURPOSE AND USES

Create a Javascript-based "Knowledge Object" by encoding some actual biomedical knowledge and turning it into an API-based service.

• Identify a published scientific paper or guideline with actionable knowledge that can be encoded
• Let instructor or GSI know what knowledge you plan to encode by Oct 23rd, 11:59pm
• Come to Instructor Office Hours at least once to receive needed guidance for this project
• Code created for this technical project must "run" or "work" to receive full credit
• Write up a summary of the work with the code in 3 to 5 pages describing its purpose and uses to be turned in Nov 18th
• 4 slides to be delivered by your group in class on Nov 22nd as a Lightning Presentation

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All Groups will present 4 slides showcasing their projects in about 4 minutes during in-class "Lightning" presentations on Tuesday, November 22.
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GRADING

% of overall course grade: 20%

Group Project Description 2% of total course grade

The Group Project Description and topic selection document is a 1-page document describing the topic/focus/plan in general in one paragraph for the (a) paper, (b) interview, (c) knowledge object build, and then describing in one or two sentences why the group settled on that topic or individual to interview, and finally listing a one to three related scientific articles that will be used as references during the project.

+++ = 3% (full credit)
++ = 2% (if incomplete or unclear)
+ = 1% (if late AND incomplete or unclear)

Project's Paper/Report/Technical Write-up 10% of total course grade

Paper/Report/Write-Up Rubric: Similar to Weekly One-Pagers Rubric for Written Work

*** Late Papers will receive + = B for a grade ***

+++ = A = 4.0
++ = A/B = 3.5
+ = B = 3.0

Project's Presentation 5% of total course grade

Presentation Rubric: Content Quality + Presentation Quality

*** Slides not in on time will result in a grade of + = B for the presentation ***

+++ = A = 4.0
++ = A/B = 3.5
+ = B = 3.0

Written Reflections on Another Group's Presentation 3% of total course grade

HMP Competency Policy

HMP Competency Model 2014 (https://sph.umich.edu/hmp/pdf/HMPCompetencyModel2014.pdf)

About HMP Competencies
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We value the Health Management and Policy competency model.
The following HMP Competencies are addressed by this course:

MEASUREMENT & ANALYSIS
Measurement:
A.1 Identify appropriate sources and gather information, effectively and efficiently.
A.2 Appraise literature and data critically.
A.3 Develop, understand and use data from performance, surveillance or monitoring systems.
A.6 Policy analysis: Understand the policy-making process and the role of politics; assess a problem and identify and compare potential policy solutions; and understand and critically assess methods to evaluate policy impact.

COMMUNICATION:
B.1 Convey: Speak and write in a clear, logical, and grammatical manner in formal and informal situations; prepare cogent business presentations; facilitate an effective group process.
B.2 Listen: Receive, process, and respond appropriately to information conveyed by others.

PROFESSIONAL DEVELOPMENT:
Self-Awareness**:**
E.1 Actively seek feedback from others, reflecting and learning from successes and failures.
E.2 Develop an accurate view of own strengths and developmental needs, including the impact one has on others.
Self-Development:
E.3 Continuously push self to raise personal standards of performance and exceed expectations.
E.4 Address knowledge, skills, and other developmental gaps through reflective, self-directed learning, and by trying new approaches.

8 Learning Objectives

Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

The Introduction to Health Informatics course is a carefully-constructed **survey of the landscape of the field of health informatics** combined with **several hands-on learning experiences** focused on existing electronic health record (EHR) systems and some other enabling technologies and standards.

Students who complete this course gain knowledge about the field and skills enabling them to:

1. **Describe challenges** currently faced by individuals seeking to improve health using information resources in each of the application domains presented in the course, Clinical, Consumer Health, Public Health, Biomedical Research, and Information Infrastructure.

2. **Articulate what is required** to develop and deploy health information resources that are truly assistive and helpful for their users

3. Explain **how and why** the key methods used in health informatics, such as standards development, Natural Language Processing (NLP), image processing, etc., are essential to creating information resources that have the potential to improve health

4. **Describe what are the core components of any computer's architecture** and how those components support the storage, manipulation or transformation, and use of health data

5. **Carry out, using simulated patient data, tasks that are routinely required of end-users of EHRs** and understand what an EHR is both functionally and operationally after having done so

6. Effectively link or connect the 4 key concepts of **infrastructure, health information exchange (HIE), interoperability, and standards** in a manner that **explains how these concepts interrelate** to enable potentially improved health information resources

7. **Clearly and concisely explain confusing or challenging health informatics concepts** through your own writing and be able to argue for or against others' positions about health informatics topics in your own words

8. **Describe, with depth of understanding and meaningful detail, what health informatics is and is not,** to an expert audience and also to an audience unfamiliar with the field

Midterm Exam Fall 2018

Academic Integrity (https://umich.instructure.com/courses/282840/pages/academic-integrity-policy)
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Full Session Midterm Exam on Wednesday October 17th 2018

On **Wednesday, October 17, 2018**, a Midterm Exam is scheduled and will be given during the entirety of the course session on that date (4:30-6:00pm).

The Midterm Exam is an open book, open notes, open laptop exam that will consist of **short-answer thought questions** about the EHR labs and the course content on Computational Concepts, Electronic Health Records,

Personal Health Records, and the Health Informatics Domains
(Infrastructure, Consumer, Clinical, Public Health, Biomedical Research).

All work on the exam must represent your own thinking and effort and not that of others.
See the Academic Integrity page linked above for more details on this.

The Midterm Exam will count for **20%** of the final course grade.

About Missing the Midterm Exam

If a student must miss the scheduled Midterm Exam due to illness, injury or some other unavoidable scheduling conflict (e.g., academic conference or life event) then the following applies:

In the case of a scheduling conflict, the student **MUST** notify the instructors of their planned absence **BEFORE** the Midterm Exam begins at 4:30pm on October 17th.

This notification must be made in writing using e-mail by no later than 4:20 pm on Wednesday, October 17th (10 minutes prior to the date and time when the Midterm Exam begins).

In the case of an emergency or illness or injury combined with failure to provide advanced notice of absence, then and only then documentation to substantiate the event, illness or injury should be provided after the fact, as appropriate.

Assuming prior notice or in response after an emergency, a make-up exam will be administered to students at an appropriate time and place that will be co-determined by the student taking the make-up exam and course instructors.

Make-up exams are **ONLY** offered to students who have communicated their absence for the regularly scheduled October 17th exam **IN ADVANCE** or who have provided documentation of an emergency event, illness or injury that kept them from taking the Midterm Exam at the regularly scheduled date and time on October 17th, as planned.

The Make-up Midterm Exam will **NOT** be the same exam as the Midterm Exam administered on October 17th at the regularly scheduled time.

Mostly In-class EHR Labs Fall 2018

Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Attendance Policy (https://umich.instructure.com/courses/282840/pages/attendance-policy)
Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Besides the reading and lecture content, four self-study EHR labs will be assigned for students to complete during the first half of the course.

Some class time will be set aside for these labs, but the amount of time set aside in class may **NOT** always be enough time to complete the labs in class. Labs may need to be completed outside of class.

Additional assistance with the self-study labs is available at Office Hours. Although the labs are designed for self-study, work on labs may involve some collaboration and teamwork. Labs can be discussed openly and lessons learned during lab by one student are freely shareable with other students. Labs are for skill building and for gaining hands-on experience with an EHR system! Students are encouraged to participate directly and meaningfully in all labs so that they gain the skills and experience that is intended to come from completing the labs.

Labs **MUST BE** completed and turned in by **4:30PM** the **FIRST WEDNESDAY AFTER** they are assigned. **Labs will be graded Credit/No Credit and letter grades will be assigned for labs according to the table below.**

NO LATE LABS WILL BE ACCEPTED!
Late labs **CANNOT** be accepted (however you have a full week to finish them!)

BE AWARE! Concepts from the four self-study EHR labs will be tested on the Midterm Exam.

** If you miss class on a day when there is an in-class lab (Oct 3rd for Labs #1 and #2; Oct 10th for Labs #3 and #4) you are **STILL RESPONSIBLE FOR COMPLETING THE LAB** by the following Wednesday. All assigned labs can be found in Canvas. Come to Office Hours for help with labs if you need it. **

# of Completed Labs	Letter Grade
4	A
3	B
2	C
1	D
0	E

Mostly in-class labs count for **10%** of the final grade.

No Do-over Policy

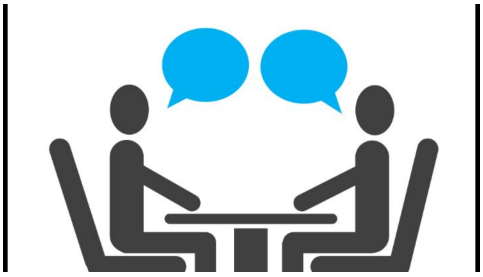
Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Calendar (https://umich.instructure.com/courses/282840/pages/calendar) Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Why No Do-overs?

We do not permit do-overs or re-dos for graded work, including one page papers, EHR labs, the Midterm Exam, or the four graded elements of the Group Project.

We do not permit do-overs because if one student gets to do an assignment over, then all students should have that same opportunity. However, giving all students the opportunity to re-do or do assignments over creates more work products than the instructors can grade in the most effective and useful manner.

Once an assignment is turned in for grading and its due date has passed, it is considered final and must be graded **ONCE** on that basis.



Office Hours Fall 2018

Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Allen Flynn
Instructor
Thursday @ 8:00-9:00am
1161-C (11th Floor)
North Ingalls Building
Office phone: 734.615.0839

Brad Iott
Graduate Student Instructor (GSI)
Friday @ 9:00-10:00am
M3525
School of Public Health Building 2 (SPH2)

One Page Papers Fall 2018

Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Calendar (https://umich.instructure.com/courses/282840/pages/calendar) **Example (https://umich.instructure.com/courses/282840/files/folder/Weekly%201%20Pager%20Example%20%26%20Formatting%20Guide?preview=8435997)** **Formatting Guide (https://umich.instructure.com/courses/282840/files/folder/Weekly%201%20Pager%20Example%20%26%20Formatting%20Guide?preview=8436052)**

What are the One Page Papers?

This course recognizes that being able to communicate complex health informatics concepts in writing is a critical career-advancing skill.

For this reason, students are assigned to write 5 one page papers throughout the semester for a total of 40% of their final grade. Each one page paper is work 8% of the final grade.

Choosing from Available Weeks to Write Your One Page Papers

Two one page papers are due in September.
Students can elect to write them in Weeks 2, 3, or 4 of the course.

Two one page papers are due in October.
Students can elect to write them in Weeks 5, 6, 8, or 9 of the course.

One one page paper is due in November.
Students can elect to write it in Week 10, 11, or 13 of the course.

One page papers are NOT an option during Weeks 1, 7, 12, 14, or 15.
Week 1 is Introduction Week
Week 7 is Fall Break & Midterm Week
Week 12 is Thanksgiving Week
Week 14 is Group Project Week
Week 15 is the Last Week

One Page Paper Topic Questions and Weekly Timing

Students are assigned to write one page papers on given topics for 5 weeks of the course. Every one page paper will thoroughly answer one Topic Question
that is provided to all students about that week's topic.

One page paper Topic Questions will be distributed and made available at:
6:00am on Wednesday Mornings
via Canvas of all weeks of the course except weeks 1, 7, 12 14, and 15.

All one page papers are due the **same** week the question is posted at:
11:59am on Saturday Mornings

One page papers are always due a little more than three days (approximately 78 hours) after the weekly question becomes available on Wednesday mornings.

Select the weeks that work best for your schedule for producing a one page paper between Wednesday morning and mid-day on Saturday.

The instructors will make every effort to grade one page papers within 7 days after they have been turned in. We often return papers much sooner than that.

Independent Work Only on One Page Papers

Each and every one page paper must be independently authored by every student. Collaboration on Weekly One-Pagers is expressly **NOT** allowed or permitted.

Weekly One-Pagers are intended to help all students improve their understanding of key health informatics concepts! The ability to understand, explain, and convey challenging concepts in health informatics is improved by writing about them!

Example and Formatting Guide

An EXAMPLE weekly 1-Page paper is **HERE (https://umich.instructure.com/courses/282840/files/folder/Weekly%201%20Pager%20Example%20%26%20Formatting%20Guide?preview=8435997)** .

A FORMATTING GUIDE for weekly 1-Page papers is **HERE (https://umich.instructure.com/courses/282840/files/folder/Weekly%201%20Pager%20Example%20%26%20Formatting%20Guide?preview=8436052)** .

An example one page paper is available on Canvas. It can be used as a guide with respect to both content and format. In addition, a formatting guide is also shared on Canvas.

The one-page limit **MUST** be maintained.

ONLY references can (and should) extend beyond one page, i.e., include ONLY one-page of text and put references on a second page, if need be. Be sure to cite your sources and attribute the ideas of others to them. Failure to properly cite sources and attribute ideas is an issue of academic integrity.

One Page Paper Grading

In total, the 5 one page papers you write independently will count for **40%** of your overall course grade.

All one page papers will receive one of the following three marks:

3 points +++ Outstanding paper!

2 points ++ Good paper

1 point + Just Acceptable (All late papers will receive a single +)

At the end of the semester the following letter grades will be assigned based on the number of plusses (+) or "points" earned for all of **5** these one page papers:

Total # of Plusses (Points)	Letter Grade	Examples of Total Scores
15	A+	5 Outstanding papers
13, 14	A	4 Outstanding and 1 Good paper OR 3 Outstanding papers and 2 Good papers
11, 12	A-	2 Outstanding papers and 3 Good papers OR 1 Outstanding paper and 4 Good papers
10	B+	5 Good papers
7, 8, 9	B	3 Good papers and 2 Just Acceptable ones
5, 6	B-	5 Just Acceptable papers OR 4 Just Acceptable ones and 1 Good one

*Five (5) one-page papers have to turned in to receive ANY credit for the course

Don't be Surprised by Your Grades on One Page Papers!

To get the highest mark (+++) on one page papers is intended to be **VERY** challenging. You may perceive the grading of these papers as “tough.” These papers are very short by design, so every word and every thought expressed in them matters. These papers need to be very well organized!

One Page Paper Grading Rubric

JUST ACCEPTABLE papers have noticeable typos, errors, misspellings, or mistakes; fail to cite the ideas of others; are unclear or seem to have been rushed; use many words to say things that could be said more concisely; make general statements that are not fully supported by facts and class materials; include too much hyperbole; do not follow the formatting guidelines; may be late; and do not directly answer, or fail to answer at all, the specific question that was asked.

GOOD PAPERS have almost no noticeable errors, typos, or misspellings; are properly formatted; cite the ideas of others appropriately; are very clear, direct, and to the point; correctly apply facts to build solid arguments or make positions known and understood; and directly answer the question that was asked.

OUTSTANDING PAPERS have no noticeable errors of any kind; are properly formatted; cite the ideas of others appropriately; are clear and direct; correctly apply facts to build solid arguments or make

positions known and understood; directly answer the question that was asked, and, in addition, **are compelling and interesting to read** because they do ONE or MORE of the following things: relate personal insights and experiences to the course material in unique ways; move beyond the texts and lecture material to offer new and different perspectives from the "outside world" that exists beyond the course; reveal something relevant and meaningful about the subject that is hard to detect or identify; mention relevant real-world examples to support arguments and positions; bring together several related course concepts in a new and meaningful way; or include short, direct, pithy, incisive, clarifying phrases and sentences that efficiently and correctly communicate complex health informatics issues.

Five One Page Papers are Required to Complete the Course

By the end of the term all students **MUST** have completed 5 (five) one page papers, TWO for the month of September, TWO for the month of October, and only ONE for the month of November.

Other Details about One Page Papers

NO PARTIAL COURSE CREDIT FOR FEWER THAN FIVE WEEKLY ONE PAGER PAPERS: Partial credit will **NOT** be awarded for completing fewer than five (5) one page papers. The student will be given an incomplete in the course if fewer than five (5) one page papers are turned in for grading by the end of the term.

SORRY, NO DO-OVERS: Only one or two papers per month per student will be graded, depending on the month. It is **NOT** possible to replace a low mark (single +) score by writing an additional weekly one-page paper. Please do not ask to replace one paper with another in this manner. Only five one page papers (total) per student will be graded during the term. This is simply because the Instructor and GSI can only grade so many papers! Also, there is no 'extra' credit opportunity to write more than the 5 assigned one page papers.

ALL LATE 1-PAGE PAPERS WILL RECEIVE ONLY A SINGLE + for a grade. Weekly one page papers are always due about 78 hours after the week's Topic Question is posted to the course's Canvas website.

Weekly one page papers for ANY week of the course can be turned until
6:00 pm, Monday, December 10, 2018.

AVOID PLAGIARISM! Demonstrable plagiarism or suspected collaboration on one page papers will result in no credit being awarded for the paper involved
(0 plusses), and, potentially, in other academic disciplinary action depending on both school and university-wide academic honesty policies.

CITATIONS MATTER! Use either the MLA, APA, Vancouver, or Chicago format for all references and please do not mix formats. Be sure that readers can distinguish your own ideas from the ideas of others, and be sure to include some of your own ideas and some of the ideas of others in each paper.

PROOFREAD PLEASE! Edit these papers carefully!

GETTING RAPID FEEDBACK TO YOU IS OUR GOAL! Considerable effort by the instructors will be made to return weekly one pager papers to you by Tuesday at Midnight following the Saturday when you turn them in. This may not always be possible, but it is an important goal to which your instructors are committed. It is recognized that all students in the course need feedback on their writing to continuously improve as writers.

Participation

Attendance Policy (https://umich.instructure.com/courses/282840/pages/attendance-policy) Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading) Office Hours (https://umich.instructure.com/courses/282840/pages/office-hours) Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

We Encourage You to Participate, Share Your Ideas, and Provide Feedback!

The course is much better when we share our ideas with each other during class and outside of class too. In addition, we can improve the course along with way with your feedback. For this reason, a small portion (10%) of the course grade depends directly on student participation and we provide a variety of ways to give us feedback about the course.

NO Attendance Taking!

We do NOT take attendance during course sessions! Even if we did, attendance would probably not be a very accurate measure of student participation in the course. And besides, we know you are busy and sometimes have to miss a course session for various reasons.

Be sure to familiarize yourself with the course Attendance Policy at the page linked above.

Participation Self-Assessment

So how do we assess student participation fairly?

We use a **student self-report and self-grading** method
for you to provide a self-assessment.

How does this self-report and self-grading method work?

At the end of September, October, and November you will receive a message with a link to a short online survey asking you to briefly recount and document examples of your in-class and outside-of-class participation during the past month.

Then, using the online survey, you will be asked to assign yourself a course participation grade for that month, which will either be
an "A" (4.0), an "A/B" (3.5), or a "B" (3.0).

You will have **1 week** to do your monthly self-report and self-grading survey each full month of the course after the message with the link to the survey comes out.

Failure to self-report and self-grade your participation within **1 week** after we publish an online link where you can do so will result in a "B" (3.0) grade for each month when no self-report and self-grade is completed online.

The course instructors will review the information shared in the student self-reports to verify its accuracy.

Overall Participation Grade:

Your overall course participation grade will be a weighted average of the three monthly participation grades that you assign to yourself or, in the case of failures to self-report and self-grade, the grades of "B" (3.0) that are assigned to you by default.

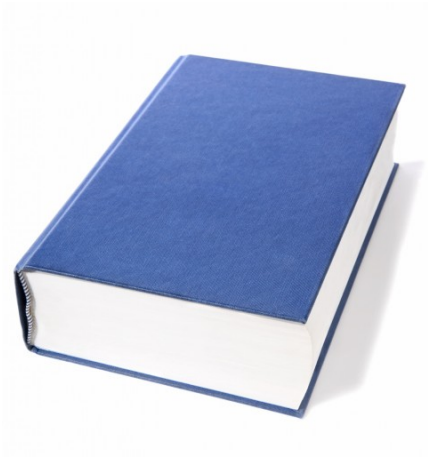
To reiterate, participation counts for 10% of the overall grade in the course.

Textbook Free online!

Download PDF (https://umich.instructure.com/courses/282840/files/8261784/download?wrap=1) (https://umich.instructure.com/courses/282840/files/8261784/download?wrap=1) **Library Record (https://search.lib.umich.edu/catalog/record/012597992)**

Copy of Textbook on Canvas (https://umich.instructure.com/courses/282840/files/folder/course_textbook?preview=8261784)

Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)



Biomedical Informatics: Computer Applications in Health Care and Biomedicine, 2014
edited by Edward H. Shortliffe, James J. Cimino

Cite as:

Shortliffe EH, Cimino JJ, editors. Biomedical informatics:

computer applications in health care and biomedicine.
Springer Science & Business Media; 2014.

Typical Week Fall 2018

Assignments & Grading (https://umich.instructure.com/courses/282840/pages/assignments-and-grading)
Calendar (https://umich.instructure.com/courses/282840/pages/calendar) Syllabus (https://umich.instructure.com/courses/282840/assignments/syllabus)

Weekly Course Readings, Lectures, Discussions, and Hands-On Activities:

For each week, there is generally a required textbook chapter and several, often short but required papers to read in addition to the chapter.

Every week we will generally have one guest lecture.

Many weeks we will share one lecture + discussion + activity session addressing the topic of the week.

It is important to stay current and up-to-date on the work in this course as the course topics change rapidly from week to week. We have a lot to cover!

Visualizing a "typical week" in the course
(not all weeks are this way, but most are)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Class sessions	4:30pm-6:00pm		4:30pm-6:00pm				
One page papers topic announced			6:00am			Due 11:59am in the morning	
Reading days	•	•				•	•
Writing days			•	•	•	•	

Things that change this routine weekly pattern in the course include:

Week 1 has no one page paper assignment
Week 7 includes Fall break and a Midterm
Week 12 includes Thanksgiving