College of
Health Solutions
Arizona State University

Syllabus for BMI 482: Undergraduate Capstone I

This syllabus is subject to change with reasonable advance notice. Please consult the syllabus on Canvas regularly.xp

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http://www.asu.edu/aad/manuals/acd/acd304-06.html

INSTRUCTOR BASICS

Instructor information
Name: Select instructor during enrollment

Does this class have an Honors contract? No

COURSE BASICS

Course Objectives and Expected Learning Outcomes
You must make the Disability Resource Center, DRC, aware if you require accommodations due to a disability. Review the **ASU Policies** section for more information.

Course meeting time and location: N/A

Catalog Description: First course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective teamwork within the context of a research project in biomedical informatics.

Course Format: In-person

Prerequisites
Student must be a BS student in Biomedical Informatics. The student should be planning on graduation within a year of taking this course.

Course Overview
This is the first of a 2-part course that provides guidance on the execution of a capstone project, the culminating activity for all students in the BMI BS program. The student will select an area of interest to apply the knowledge and skills gained during the didactic courses. The student will develop an informatics-based application and/or apply informatics science and skills to address a health informatics problem with the mentorship of a faculty advisor. The student will develop specific goals and objectives for the project agreed upon by the student and the Faculty Advisor (BMI faculty member). These goals will concurrently reflect the student's area of interest and the needs of a specific healthcare stakeholder group.

Relationship to BMI 483

BMI 482 is the first of a two-semester culminating experience that must be taken **before** BMI 483. Generally, BMI 482 is taken in Fall and BMI 483 is taken in Spring. This can be adjusted in order to meet expected graduation dates. Because of the continuity between the two courses, the BMI faculty member advising the student (faculty advisor) **should not change** from BMI 482 to BMI 483 unless written permission is given by the Chair of the BMI academic program committee (APC). For such permission, the student will need to contact the undergraduate program advisor to initiate this request.

The ultimate format and content of each student's 482 and 483 deliverables (Capstone Papers 1 & 2) will be decided by the individual BMI faculty member in collaboration with the student. The ultimate form and content of the deliverable must be discussed and documented at the beginning of BMI 482 and at each milestone. Adjustments to priorities, plans and/or approach may occur. Please clearly document the rationale for such as appropriate.

A common approach to this two-semester sequence involves a substantial literature review as the central BMI 482 deliverable (Capstone 1), while 483 constitutes application development, data analytics, informatics methods etc. based on the identified gap in research from the literature review completed for BMI 482. While preliminary data analysis and model development can be performed as part of BMI 482, it is expected that the analysis and the models will be improved, enhanced and documented during BMI 483.

Both courses require a final written document, Capstone 1 and Capstone 2 papers The contents of Capstone 2 **may derive from Capstone 1.** For example, a student who submits a literature review for the final document of BMI 482 may use this information in the introduction and background sections of the final Capstone 2 paper submitted for BMI 483. As mentioned, the ultimate format, deliverables and plan must be approved by the individual BMI faculty member who has agreed to serve as your Faculty Advisor.

Learning Outcomes
At the completion of this course, students will be able to:

- Effectively execute a capstone project with guidance from your capstone Faculty Advisor
- Write a scientific report that clearly describes the work conducted and the outcomes based on the results of the capstone project.

Capstone Examples
Projects that involve software development, app development, implementation, community outreach, public (or consumer) health data analysis, needs requirements analysis, database modeling, translational bioinformatics projects, knowledge management and so forth. If you have been tasked with a programming or data analysis task, the task alone does not constitute a Capstone project. You may turn this experience into a project, but it requires something that uniquely makes it your own project.

Required Technology, Technical Support and Internet Outage Plan
This class can be face-to-face in person or virtual. You will be asked to log into Canvas, the Learning Management System, LMS. This requires a computer, a stable internet connection, and in some cases a webcam and microphone.

You have access to 24/7 technical support. Full details of this support are provided in the **ASU Policies** section. A summary of available resources is provided below:

1. To monitor the status of campus networks and services, visit the System Health Portal at http://syshealth.asu.edu/.

2. To contact the help desk you have two options:

   o For immediate assistance, call ASU at 1-855-278-5080.
   o Visit the ASU Experience Center (https://uto.asu.edu/experiencecenter) to get personalized support through 24/7 live chat or by submitting your request online (https://my.asu.edu/service).

Network and internet outages are never expected. Be prepared and have a plan in case you find yourself without internet.

Textbook, Special materials and extracurricular activities

Textbook: None. Individual readings assigned by instructor. Students will be provided with several articles or online papers on how to prepare a project plan and how to write a scientific paper, which will be available in Canvas. The need for additional materials depends on the student's Capstone project.

Special materials and technology: None

Extracurricular activities: None

Evaluation methods:

Evaluation types: progress reports, outline, draft, and final paper

Course Schedule

All assignments must be submitted via Canvas.

Activities in this course include supplemental readings and individual activities/assignments.

Description of Assignments:

- ***Capstone Plan***
    - o An approved Capstone Plan is required at the beginning of the course. You must use the template provided. It is important to include a timeline (take into account the progress reports) and identify what you want to accomplish for each progress report. You must obtain a signature from your faculty advisor before submitting on Canvas.

- ***Progress Reports***
    - o You will submit a total of 2 Progress Reports (template provided in Canvas). The Report will focus on recent progress, upcoming activities, and risks/issues. You must obtain a signature from your Faculty Advisor before submitting on Canvas.

- ***Capstone Paper Outline***
    - o You will create a robust outline of your final Capstone paper, including several key references. You must work with your Faculty Advisor to finalize this outline prior to submission. The outline should us the format of a scientific paper with subheadings: Abstract, Introduction/Background, Methods, Results, Discussion, Conclusion, and References. If your project is unique and other headings are better suited, please discuss this with your Faculty Advisor *prior* to submission of the outline.

- ***Capstone 1 Paper***
    - o A 10-15-page (actual text pages excluding cover page and references) paper that details the major accomplishments, *e.g.* completed literature review and demonstrates knowledge of the topic and what is planned to accomplish in 483. Please use the manuscript format guidelines provided on Canvas. Cite your references using the Vancouver citation format. Your paper should be double-spaced, in 12-point Times New Roman font, with 1-inch margins all around, and have a minimum of 10 peer-reviewed published journal articles in the references section. This report, along with other deliverables specified in the Capstone Plan, will be submitted to the faculty advisor via Canvas in completion of the course.

        As 483 is a continuation of 482, the Capstone I final paper is a summary of what you have completed this first semester. NOTE: The 483 final paper (Capstone 2) may contain background information from the 482 paper.

Grading Policy:
Grade breakdown:

Letter grade	Numerical Equivalent
A+	97-100
A	93-96
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	70-76
D	60-69
E	< 60

Make-up work/late submission general policy: ½ letter grade reduction for 3 days then zero.

CLASS EXPECTATIONS
Attendance Policy: N/A

Expected Classroom Behavior: **N/A**
Student Success Tips:
Time Management

Your success in this class depends greatly on the time you spend on independent study and completion of assignments. In general, expect to spend a minimum of **3 hours** for **each** credit hour **per week** studying outside of class. So, for a 3-credit class set aside 9 hours per week for just that one class. Add on extra time around mid-terms and finals. How much time does that leave you for work, relaxation, and other commitments? Here are some resources to help you get organized and create a study plan.

[Click here to calculate your available study time](#)

[Click here to discover how many hours you should be studying](#)

Study Techniques

It's important that you attend all classes and complete all assignments to be successful in your College career. To support this, you should take a look your study habits. Consider *where,*

when, and how you study. For example, trying to read a complex paper in a loud coffee shop may be too distracting for you to really understand the material. Waiting until the last minute to write a paper rarely yields good results. Take a look at the guide provided below for more suggestions to optimize your study time.

[Click here to access a study guide](#)

Active Reading

You will have to read a lot throughout your degree! It's common practice to highlight content as you read it to help remember it. Studies show, however, that this is not as effective as previously thought. A much better way to help you process and retain the information is to write down the important points and quiz yourself as you read. This is known as "active reading." Download the handout provided below to get started on this simple technique that can help you from day one at ASU.

[Click here to access the active reading technique guide](#)

Available Academic Resources

ASU has a wealth of resources to enable your success. [Click here to check out the University Academic Success Programs](#) website that includes information on the writing center, tutoring, supplemental instruction, graduate academic support and more.

ASU POLICIES
[ASU Academic Policies](#) – January 6, 2020

ASU Excused Absences
Accommodation for Religious practices in accordance with [ACD 304-04](#)

Summary: Administrators and faculty members are expected to reasonably accommodate individual religious practices (e.g., by an adjustment to the academic or workplace environment, such as rescheduling, flexibility in scheduling, voluntary substitutions, job reassignments, modification of grooming requirements). A refusal to accommodate is justified only when undue hardship to the university's legitimate business purposes would result from each available alternative of reasonable accommodation (e.g., requires more than ordinary administrative costs, diminishes the efficiency in other jobs, infringes on other employees' job rights or benefits, or impairs campus/workplace safety). Contact the Office of the Provost of the University or the Office of Equity and Inclusion for assistance in determining undue hardship or reasonable accommodation.

Missed class due to University-sanctioned activities in accordance with ACD 304-02

Summary: _Students_ *who participate in university-sanctioned activities that require classes to be missed, shall be given opportunities to make up examinations and other graded in-class work. However, absence from class or examinations due to university-sanctioned activities does not relieve students from responsibility for any part of the course work required during the period of the absence.*

The provost of the university or designee shall determine, for the purposes of this policy, whether a particular event qualifies as a university-sanctioned activity.

In each college, a specific individual (e.g., dean's designee) shall be responsible for facilitating adherence to this policy. In particular, students who participate in university-sanctioned activities shall,

1. In accordance with any academic unit or college requirements, be provided make up assignments, examinations, or other graded coursework that was missed because of the university-sanctioned activity without penalty; if this is not possible,
2. Receive an incomplete, with arrangements made for completing the final coursework and earning a final grade.

Campus Network Outage and Technical Support

When access to Canvas is not available for an extended period of time (greater than one entire evening) you can reasonably expect that the due date for assignments will be changed to the next day (assignment still due by 11:59pm).

To monitor the status of campus networks and services, please visit the System Health Portal.

Technical Support

This workshop uses Canvas to deliver content. You can access Canvas through your myasu portal.

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   o For immediate assistance, call ASU at 1-855-278-5080.
   o Visit the ASU Experience Center (https://uto.asu.edu/experiencecenter) to get personalized support through 24/7 live chat or by submitting your request online (https://my.asu.edu/service).

For more information on Canvas the following resources are suggested:

- Canvas Course Tour Video
- Canvas Student guide
- Digital Portfolios Help Resources
- Library Resources for Students
- Best Practices for Setting Course Notifications
- Canvas Student App - Download through Google Play (Android) or the App Store (iOS)
  o Android Guide
  o iOS Guide

Other useful links

   o Undergraduate Academic Advising

- o [ASU Email Guide](#)
- o [ASU Wireless Network](#)

Disability Accommodations:

Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to me at the beginning of the semester either during office hours or by appointment. Note: Prior to receiving disability accommodations, verification of eligibility from the Disability Resource Center (DRC) is required. Disability information is confidential.

Establishing Eligibility for Disability Accommodations: Students who feel they will need disability accommodations in this class but have not registered with the Disability Resource Center (DRC) should contact DRC immediately. Students should contact the Disability Resource Center, campus-specific location and contact information https://eoss.asu.edu/drc/contactus) can be found on the DRC website. DRC offices are open 8 a.m. to 5 p.m. Monday – Friday. Check the DRC website (http://eoss.asu.edu/drc) for eligibility and documentation policies.

Email: DRC@asu.edu

DRC Phone: (480) 965-1234

DRC FAX: (480) 965-0441

Academic Integrity and Student Code of Conduct:

ASU expects and requires its students to act with honesty, integrity, and respect. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), the [Computer, Internet, and Electronic Communications Policy](#), the [ASU Student Academic Integrity Policy](#), and outlined by the [Office of Student Rights & Responsibilities](#). Anyone in violation of these policies is subject to sanctions.

Academic Integrity

While interaction among students is encouraged, all work performed on the class assignments and quizzes must be that of the student taking the quiz. Any indication that the work on a quiz or exam is not that of the student can lead to a range of consequences from failing the quiz to failing the course and reporting the lack of academic integrity to the College. No use of work by other students can be used, and no work taken verbatim and directly from other sources (e.g., the internet) can be used. Academic honesty will be taken very seriously in this course. Please consult http://students.asu.edu/srr/code for the ASU Student Code of Conduct.

ASU expects and requires its students to act with honesty, integrity, and respect. Required behavior standards are listed in the Student Code of Conduct and Student Disciplinary Procedures (http://www.asu.edu/aad/manuals/ssm/ssm104-01.html), Computer, Internet, and Electronic Communications policy (http://www.asu.edu/aad/manuals/acd/acd125.html), ASU

Student Academic Integrity Policy (http://provost.asu.edu/academicintegrity), and outlined by the Office of Student Rights & Responsibilities (https://eoss.asu.edu/dos/srr). Anyone in violation of these policies is subject to sanctions.

The ASU student academic integrity policy lists violations in detail. These violations fall into five broad areas that include but are not limited to:

1. *Cheating on an academic evaluation or assignment.*
2. *Plagiarizing.*
3. *Academic deceit, such as fabricating data or information.*
4. *Aiding academic integrity policy violations and inappropriately collaborating.*
5. *Falsifying academic records.*

Student Code of Conduct

Violations of the ASU Student Code of Conduct, other than the provision concerning academic dishonesty, are more generally considered inappropriate behavior. The Office of Student Rights and Responsibilities reviews and sanctions these matters. If a student violates both the academic integrity provision and additional provisions of the Student Code of Conduct, both the college and the Office of Student Rights and Responsibilities will review the matter. Each independently makes determinations concerning violations and appropriate sanctions.

Disruptive or Violent Behavior
Students are entitled to receive instruction free from interference by other members of the class (http://www.asu.edu/aad/manuals/ssm/ssm104-02.html). An instructor may withdraw student from the course when the student's behavior disrupts the educational process per Instructor Withdrawal of a Student for Disruptive Classroom Behavior (http://www.asu.edu/aad/manuals/usi/usi201-10.html).

Appropriate online behavior (also known as netiquette) is defined by the instructor and includes keeping course discussion posts focused on the assigned topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. Inappropriate discussion board posts may be deleted by the instructor.

Health Equity and Inclusion
The College of Health Solutions is on a mission to improve the mental and physical health of our larger and immediate communities by better understanding the challenges that individuals and populations face, while striving to be part of the solution. The college is committed to the idea that every member of our society should have the opportunity for good health and wellness throughout their lifespans. In an effort to actualize this ideal, we embrace and support greater justice, diversity, equity, and inclusion in everything we do, including teaching, research, service and clinical practice.

Learn more about the College of Health Solutions' commitments to justice, equity, diversity and inclusion at https://chs.asu.edu/about/justice-equity-diversity-inclusion.

Prohibition Against Discrimination, Harassment, & Retaliation

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at https://sexualviolenceprevention.asu.edu/faqs*.*

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, https://eoss.asu.edu/counseling*, is available if you wish discuss any concerns confidentially and privately.*

Copyright

Third-Party Software and FERPA

*During this course you might have the opportunity to use public online services and/or software applications sometimes called third-party software such as a blog or wiki. While some of these are required assignments, you need **not** make any personally identifying information on a public site. Do not post or provide any private information about yourself or your classmates. Where appropriate you may use a pseudonym or nickname. Some written assignments posted publicly may require personal reflection/comments, but the assignments will not require you to disclose any personally identifiable/sensitive information. If you have any concerns about this, please contact your instructor.*

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