

# SFWE 201: Software Engineering Sophomore Colloquium

## Course Syllabus

(1 unit course)



**Instructor:** Sharon O'Neal

**Contact Information:** [sharononeal@arizona.edu](mailto:sharononeal@arizona.edu)

520-822-4040 (cell)

**Office:** Engineering Room 255 (or via Zoom)

**Office Hours:** Mon and Wed from 1pm – 3pm (AZ time zone)

*Appointments can be made outside of normal office hours by contacting the instructor to schedule a time that is mutually convenient*

## Course Description

This course is a colloquium designed to help students explore different career opportunities for Software Engineering professionals. Students will interact and learn from professional software engineers while exploring various roles that software engineers play in solving real engineering problems. The course helps students determine focus areas within the SFWE degree program related to specific application areas of interest. Additionally, students will prepare a professional technically focused resume highlighting their skills and experience. Students will explore strategies on how to secure an internship position in diverse industries prior to completing their BS degrees.

### Course Objectives:

During this course, students will be able to:

1. Gain exposure to diverse software engineering applications areas and products.
2. Explore/explain relationships between software engineering, other engineering disciplines (*i.e. Systems Engineering and Electrical / Computer Engineering*) and Computer Science.
3. Build professional networks, write resumes, and practice interviewing for future career opportunities, including internships, study abroad, etc.
4. Explore technical elective options available in the SFWE program and develop a preliminary roadmap and plan for their remaining undergraduate education and summer internship goals.

### Expected Learning Outcomes:

Upon the completion of this course, students should be able to:

- 1) Explore and write about diverse and distinct software engineering career opportunities and application focus areas. *[ABET Student Outcome 1 - SW Engineering Addendum]*
- 2) Develop and refine a professional resume to be used for future intern and career pursuits in software engineering. *[ABET Student Outcome 3]*
- 3) Engage in career opportunity discussions with at least 2 different professional software engineering companies / corporations. *[ABET Student Outcome 3]*
- 4) Summarize presentations given by a minimum of 8 different software engineering professionals sharing their educational and professional backgrounds, and work experiences. *[ABET Student Outcome 1 – SW Engineering Addendum]*
- 5) Compare and contrast how diverse software applications produce solutions to meet specific objectives/needs in a variety of fields including, but not limited to aerospace and defense, public health, security, safety, social, research, and economic applications *[ABET Student Outcome 2]*
- 6) Develop a Linked-In profile to prepare students for internships and career opportunities in software engineering. *[ABET Student Outcome 3]*
- 7) Summarize both ethical and professional responsibilities of a software engineering professional. *[ABET Student Outcome 4]*
- 8) Develop a plan of study that students can use to map out and select technical electives courses to better prepare them to achieve their short and longer-term career goals/objectives. *[ABET Student Outcome 7]*

**Course Prerequisites:**

SFWE 101 - Introduction to Software Engineering

**Course Format and Work Required:**

This course is structured around weekly progress. It will include a combination of presentations, activities focused on experiential learning, in-class discussions, and assignments. The expected weekly progress is outlined in the course schedule. At a minimum it is recommended that students keep up with coursework by following the outlined course schedule on D2L. Note the **DUE DATES** on course deliverables are all posted on D2L.

Participating in this course is vital to the learning process. As such, timely participation in all class activities, online discussions and/or any team collaboration assignments is absolutely required. Students are expected to attend/watch all lectures and access the course at least once a week.

The following summarizes the primary activities / deliverables for this course:

➤ **Engagement / Participation:**

Participating in this course is vital to the learning process. As such, timely participation in all class activities, online discussions and/or any team collaboration assignments is absolutely required. Students are expected to attend/watch all lectures and access the course at least once a week. Participation will be monitored through a variety of means, including but not limited to:

- 1) Attending in-person and/or watching pre-recorded videos of several guest speakers across a broad and diverse range of industries.
- 2) Responding to D2L Discussion prompts related to the material presented and discussed throughout the course.
- 3) Participating in various Career Fair opportunities that will be announced on D2L at the start of the class session/semester.
- 4) Sharing strategies with classmates on obtaining internships and other career enhancing workshops.

➤ **Reflection:**

A student reflection report is required each week. Each reflection should provide:

- 1) Overview of the speaker's education, professional experience, and current profession/job description OR a summary of the key takeaways from other professional development discussions / topics covered in the course
- 2) A summary of the speaker's topic and key points covered
- 4) Identification of any specific information that relevant to the student's career decisions
- 5) Any other observations of interest correlated to that week's materials/topics.

Each reflection should be at a minimum 1 page in length, single spaced, font size 12 and submitted to the assignment folder on D2L by the due date. [This rule is strictly enforced]. Reflections will be graded on a 10-point scale. A rubric will be provided on D2L and students should pay particular attention to the specific grading criteria contained in the rubric.

➤ **Resume / LinkedIn Profile:**

- 1) Students must develop and submit a professional resume that can be used to search for a summer internship or professional position. Feedback will be provided as needed to develop the final resume. The due date for final resumes will be posted on the corresponding D2L assignment folder, but the resume can be updated anytime during the semester. **Resumes will not be distributed without your permission.** Please be aware that the University of Arizona Career Services is a great resource for resume development and information about career fairs held on campus (check with them to know what services / opportunities are available to students). Career fairs are a great chance to meet with prospective employers for internships, as well as later for permanent positions after graduation. Draft and final resumes will be submitted to the appropriate D2L assignment folder.
- 2) Students will create a LinkedIn.com profile including a professional appearing photo (this does not mean that you have to hire a professional photographer, but don't take a picture from a party where you might be embarrassed in the future), your experience (if any), education (in progress), and skills. Send a request to connect to the instructor (Sharon O'Neal) and create a badge and submit a link to the student's profile in the corresponding assignment folder. If the student already has a LinkedIn profile, send the instructor a connection request. (NOTE: In the event the student is already connected to the instructor, still submit a link to the student's profile in the assignment folder). Incomplete profiles will not be accepted (e.g. student's must have a picture and relevant information) and a grade will be given when the request is accepted and profile is reviewed for compliance.

➤ **Career Fair:**

Students are required to participate in an engineering career fair at some point throughout the session/semester. They are required to introduce themselves to a minimum of two companies. A list of known career fair opportunities, both sponsored by the University of Arizona and other professional affiliations, will be posted on D2L at the start of each session/semester. The due date for the Career Fair Report will be posted on D2L.

Prepare a report that summarizes the experience including:

- 1) Identification of who the student met with (name, role only – no contact information)
- 2) Summary of the company and what the company does/develops/manufacturers
- 3) Identification of any summer internship programs available

#### 4) Any planned or expected follow-up

##### ➤ **Plan of Study:**

A plan of study will be developed that details the courses that the student will take and the semester the courses are planned to be taken. This plan should include candidate SFWE technical electives (specific courses should be listed). The plan can be revised in future semesters but is intended to be a good initial roadmap.

##### ➤ **Engineering Ethics:**

One class will be devoted to a discussion of Engineering Ethics. Before this class starts, a pre-assessment quiz before the class meets must be completed. Students will be given full credit for completing the quiz before class, not on correct or incorrect answers. Similarly, there will be a post-assessment quiz that the student must complete. Students will be given credit based on percentage of correct or incorrect answers. Students must complete both quizzes to get credit for this assignment.

##### ➤ **Final Report:**

A final report is required and must include a summary statement of the student's career plan (at this point in time), planned technical electives and a summer internship strategy, and a summary of the speakers/topics that the student found useful during the semester. Final reports are graded on a 100-point scale. A rubric will be provided on D2L and students should pay particular attention to the specific grading criteria contained in the rubric.

### **Course Communications:**

Announcements and important reminders will be regularly posted on D2L. Log in frequently to check for new announcements, reminders, and information related to the course.

Students are encouraged to reach out to the instructor frequently throughout the semester via email, phone call, text, or schedule an in-person or Zoom meeting. Every attempt will be made to respond to any questions or concerns that you may have within 24 hours, if possible (often sooner).

### **Class Attendance / Participation Policy:**

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

As mentioned previously, participating in this course is vital to the learning process. As such, timely participation in online discussions and/or any team collaboration assignments is absolutely required. Students are expected to attend/watch all lectures and access the course at least twice a week. At a minimum, it is recommended that students keep up with coursework by following the outlined course schedule and notifications that will be posted on D2L. Note: **DUE DATES** for course deliverables will be documented both in the course calendar located on the course D2L Homepage and in the Content section of D2L.

Absences or failure to participate in class may affect a student's final course grade. If you anticipate being absent, are unexpectedly absent, or are unable to participate in class online activities, please contact the instructor as soon as possible. To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or [drc-info@email.arizona.edu](mailto:drc-info@email.arizona.edu). If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is in the Robert L. Nugent Building, room 100, or call 520-621-7057.

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences>

**Textbooks:** There are no required textbooks for this course.

**Other Supplemental Readings / References:** Additional supplemental materials will be referenced and provided to students via D2L.

### **Course Schedule:**

Because this course relies heavily on interactions and engagements with professional guest speakers with diverse software engineering backgrounds and experiences, the specific course schedule will be posted on D2L for any given semester. However, the table below provides an outline of the types of professional speakers and professional development topics that will also be covered in the class:

Module	Topic	Learning Outcomes
<b>Module 1</b>	<b>Career Exploration – Large Scale Software Development Products:</b>  <b>TBR guest speaker from Microsoft</b>  <b>TBR guest speaker from Apple</b>	<ul style="list-style-type: none"> <li>• Explore software engineering careers at large companies like Microsoft and Apple</li> <li>• Describe different types of software in large scale software products and tools developed by these companies</li> <li>• Explore the challenges and issues with developing and maintaining software products that have a very large user base with longevity &gt; 10 years.</li> </ul>
<b>Module 2</b>	<b>Resume Building Workshop</b>	<ul style="list-style-type: none"> <li>• Explore techniques used to develop a compelling resume for engineering positions</li> <li>• Develop and refine a technical resume</li> <li>• Write a compelling cover letter to accompany a resume</li> <li>• Create a LinkedIn profile</li> </ul>
<b>Module 3</b>	<b>Preparing for a Career Fair and Interview in Software Engineering</b>	<ul style="list-style-type: none"> <li>• Investigate different interview types/ styles used by diverse industries</li> <li>• Explore strategies to and effectively communicate technical skills, experience, and collaboration techniques</li> <li>• Participate in “mock interviews” with fellow classmates and industry professionals</li> </ul>
<b>Module 4</b>	<b>Career Exploration – Aerospace and Defense:</b>  <b>TBR guest speaker from Raytheon Technologies</b>	<ul style="list-style-type: none"> <li>• Explore software engineering careers at large companies like Raytheon Technologies and General Dynamics</li> <li>• Describe different types of software in large scale software products and tools developed by these companies</li> <li>• Explore the challenges and issues with</li> </ul>

	<b>TBR guest speaker from General Dynamics</b>	developing and maintaining real time embedded software products
<b>Module 5</b>	<b>Career Exploration – Cloud Computing and Communications:</b>  <b>TBR guest speaker from ViaSat</b>  <b>TBR guest speaker from Amazon</b>	<ul style="list-style-type: none"> <li>• Explore software engineering careers at large companies like ViaSat and Amazon</li> <li>• Describe different types of software in large scale software products and tools developed by these companies</li> <li>• Explore the challenges and issues with developing and maintaining communications and eCommerce software products</li> </ul>
<b>Module 6</b>	<b>Career Exploration – Social Media and eCommerce Platforms:</b>  <b>TBR guest speaker from Snap, Inc</b>  <b>TBR guest speaker from Pinterest</b>	<ul style="list-style-type: none"> <li>• Explore software engineering careers at large companies like Snap Inc and Pinterest</li> <li>• Describe different types of software in large scale software products and tools developed by these companies</li> <li>• Explore the challenges and issues with developing, maintaining, and securing social media platform software products</li> </ul>
<b>Module 7</b>	<b>Ethical and Security Principles and Practices in Software Engineering</b>	<ul style="list-style-type: none"> <li>• Identify ethical and professional issues that are important for software engineers</li> <li>• Identify the role of software in developing secure software</li> <li>• Identify the role software plays in privacy and cybersecurity.</li> </ul>
<b>Module 8</b>	<b>Educational Focus Plan and Career Roadmap</b>	<ul style="list-style-type: none"> <li>• Develop a plan of study that details the courses that the student will take and the semester the courses are planned to be taken for the duration of the SFWE degree pursuit</li> <li>• Develop a preliminary career roadmap based on the student’s current interests and experiences in software engineering</li> </ul>

### D2L Course Management System:

This course uses the University of Arizona's D2L course management system. You are **required** to use D2L with this class and are encouraged to check our D2L class course space daily.

You are also encouraged to have D2L email forwarded to your primary University of Arizona email account. We will use D2L for course assignments, exams, content distribution, and important announcements. The University of Arizona's D2L system is available at: <http://D2L.arizona.edu>.

### Course Assignments and Exams:

As described in a prior section, there will be regular graded assignments on the topics covered in class and one Final Report. There will also be module-based discussion board prompts that each student is required to participate in and will be graded for. Due to the colloquium nature of this course, there are no exams.

The grading distribution for course assignments, class participation/engagement, and other deliverables is as follows:

<i>Engagement:</i>	30%
<i>Reflections:</i>	35%
<i>Resume:</i>	10%
<i>Draft = 2%, Final Resume = 5%, LinkedIn Profile = 3%</i>	
<i>Career Fair Report:</i>	5%
<i>Plan of Study</i>	5%
<i>Engineering Ethics (Pre and Post Assessments):</i>	5%
<i>Final Report:</i>	10%
<b>Total</b>	<b>100%</b>

Rubrics will be posted on D2L for all homework assignments and deliverables.

### Grading Scale and Policies:

The following scale will be used to award the final grades:

Percentage	Letter Grade
90% – 100%	A
80% – 89%	B
70% – 79%	C
60% – 69%	D
<60%	E

All assignments are due at the time that it is specified in the course schedule and/or D2L content pages. ***Late homework and projects will not be accepted without prior approval by the instructor and will receive 0 points.***

#### **Course Time Zone:**

All dates and times mentioned in this course represent Mountain Standard Time (Arizona), which is UTC-7 hours. Arizona does not observe Daylight Savings Time. You can use the following link to get the current local time in Tucson, Arizona: <http://www.timeanddate.com/worldclock/city.html?n=393>

#### **Dispute of Grade Policy:**

You can dispute any grade that you receive within two weeks that the grade has been awarded.

#### **Incomplete (I) or Withdrawal (W):**

Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

#### **Academic Policies and Institutional Resources:**

##### **Academic Policies and Procedures:**

As a University of Arizona student, you are expected to become familiar with and abide by the university-wide policies and procedures. You can find complete, up-to-date information at: <http://catalog.arizona.edu/policies>

##### **Academic Integrity:**

This course has a **zero tolerance policy** with respect to violations of academic integrity. Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

Academic Dishonesty occurs whenever any action or attempted action is pursued that creates an unfair academic advantage or disadvantage for student and/or any member or members of the academic community. All forms of academic dishonesty are subject to sanctions under the Code of Academic Integrity. Sanctions include written warning, reduction in grade for work involved, disciplinary probation, loss of credit for work involved, failing grade in the course, suspension, and/or expulsion. Various forms of academic dishonesty include, but are not limited to cheating, fabrication, facilitating academic dishonesty, and/or plagiarism. If you are unclear what constitutes plagiarism, please ask the instructor.

Academic Misconduct is defined as any behaviors not conforming to prevailing standards or rules within the academic community. All forms of academic misconduct are subject to sanctions under the Code of Conduct. Sanctions include restricted access to University property, administrative hold, warning, probation, suspension, and/or expulsion. Various forms of academic misconduct include, but are not limited to disruptive behavior, threatening behavior, and/or the theft or damage of University property. For more specific examples of academic dishonesty, academic misconduct, and how to avoid such behaviors, please visit the following website:

<http://deanofstudents.arizona.edu/tipsforavoidingacademicdishonesty>

The University Libraries have some excellent tips for avoiding plagiarism available at: <http://www.library.arizona.edu/help/tutorials/plagiarism/index.html>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA email to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student email addresses. This conduct may also constitute copyright infringement.

### **Classroom Behavior Policy:**

To foster a positive learning environment, students and the instructor have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

### **Online Collaboration/Netiquette:**

In this course, you will primarily communicate with the instructor and peers through a variety of tools such as discussion forums, Jamboard, email, and other forms of web conferencing. The following guidelines will enable everyone in the course to participate and collaborate in a productive, safe environment.

- Be professional, courteous, and respectful as you would in a physical classroom.
- Online communication lacks the nonverbal cues that provide much of the meaning and nuances in face- to-face conversations. Choose your words carefully, phrase your sentences clearly, and stay on topic.
- It is expected that students may disagree with the research presented or the opinions of their fellow classmates. To disagree is fine but to disparage others' views is unacceptable. All comments should be kept civil and thoughtful. Remember that this course abides by university policies regarding disruptive behavior: <http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting>

- Compose your messages and posts in a word processing tool and check your spelling and grammar before submitting your post / email.

### **Threatening Behavior Policy:**

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to one's self. See: <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

### **UA Nondiscrimination and Anti-harassment Policy:**

The University is committed to creating and maintaining an environment free of discrimination, <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

### **Statement of copyrighted materials:**

All lecture notes, lectures, study guides and other course materials disseminated by the instructor to the students, whether in class or online, are original materials and reflect intellectual property of the instructor or author of those works (with the exception of other published reference materials – i.e. course textbooks). All readings, study guides, lecture notes and handouts are intended for individual use by students. You may not distribute or reproduce these materials for commercial purposes without the express written consent of the instructor. Students who sell or distribute these materials for any use other than their own are in violation of the University's Intellectual Property Policy (available at <http://ogc.arizona.edu/node/16>). Violations of the instructor's copyright may result in course sanctions and violate the Code of Academic Integrity.

### **Student Support:**

The instructor is available to assist with **content-related** issues. You may, at any time, email the instructor. This course also provides an **Ask the Instructor** discussion forum within the D2L environment. You are encouraged to post content-related questions to this forum at any time, especially for things that will benefit all students. *(It is not recommended that you use this forum for individual questions that are specific to your work or performance in the class.)* This forum will be monitored on a regular basis and the instructor will respond in a timely fashion. It is common for other students to participate in answering questions posted in the **Ask the Instructor** forum. You should feel free to contribute to the solution if you can provide knowledge or guidance related to the question.

The following are guidelines for requesting support:

- **General Course Questions:** Use the **Ask the Instructor** discussion forum for questions regarding course materials or policy.
- **Personal Course Questions:** Email the instructor to discuss grades or personal concern.

- **D2L Support Questions:** Email [D2L@email.arizona.edu](mailto:D2L@email.arizona.edu)

### **Accommodations for Students with Disabilities:**

The goal for this class is to enable learning experiences that are as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let the instructor know immediately so that we can discuss options. You are encouraged to contact Disability Resources (520-621-3268) to establish reasonable accommodations. For additional information on Disability Resources and reasonable accommodations, please visit <http://drc.arizona.edu/>.

If you have reasonable accommodations, please plan to meet with the instructor by appointment to discuss accommodations and how course requirements and activities may impact your ability to fully participate.

Students needing special accommodations or special services should contact the Disability Resources Center, 1224 East Lowell Street, Tucson AZ 85721, (520)621-3268, FAX (520)621-9423, email: [drc-info@email.arizona.edu](mailto:drc-info@email.arizona.edu), <http://drc.arizona.edu/>. You must register and request that the center or DRC send the instructor official notification of your needs as soon as possible.

Please contact the instructor to discuss accommodations and how this course's requirements may impact your ability to fully participate. The need for accommodations must be documented by the Disability Resources Center.

### **Library Support:**

The University of Arizona Libraries provides the research tools you need at any time. For an abbreviated list of resources directly related to a specific course, select the **Library Tools** link (located in the Tools drop down on the left of the screen within the Course Navigation bar).

### **Course Grievance Policy:**

In case of grievances with a course component or grading, students are encouraged to first try and resolve the issue with the instructors. If you feel the issue is not resolved satisfactorily, please send an email to [misonline@eller.arizona.edu](mailto:misonline@eller.arizona.edu).

### **Course Surveys and Evaluations:**

Near the end of each semester / session, students will receive an invitation via email to complete an online course survey associated with this course administered by the Office of Instruction and Assessment thru the UA Student Course Survey (SCS) tool.

Your feedback is very important to the instructor as shown in the diagram below:

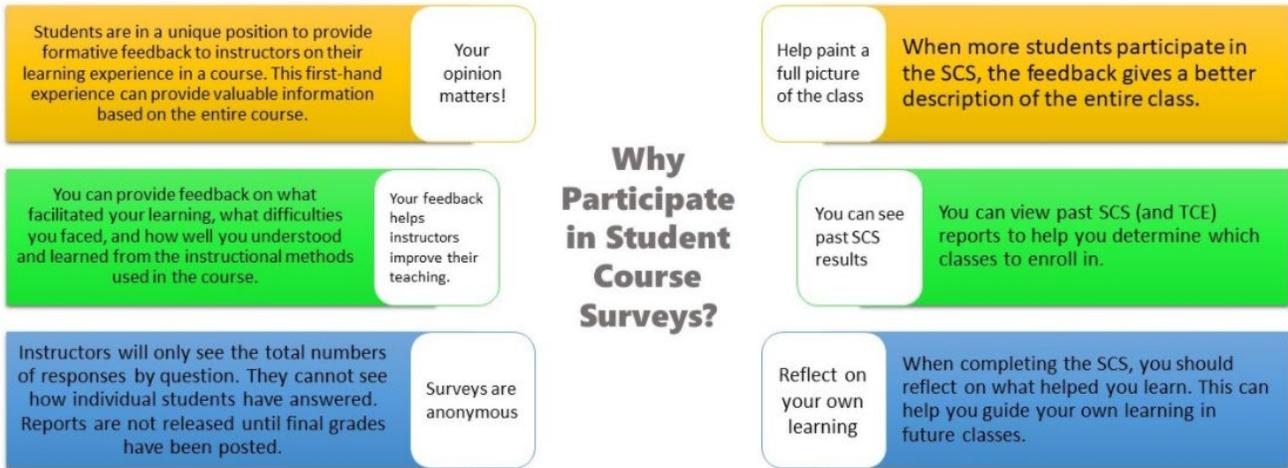


Diagram Source: [whyscscropped.jpg \(1280x491\)](http://whyscscropped.jpg) (arizona.edu)

Your feedback is extremely valuable and will be used to make changes and enhancements to the course to better meet student needs in the future.

**Additional Resources for Students (recommended links):**

- Student Assistance and Advocacy information is available at:
  - <http://deanofstudents.arizona.edu/student-assistance/students/student-assistance>
- **Confidentiality of Student Records:** <http://www.registrar.arizona.edu/ferpa/default.htm>

**Subject to Change Statement:**

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.