



Northeastern University

College of Engineering

Multidisciplinary Graduate Engineering Course Syllabus

Course Information

Course Title: Accounting and Budgetary Systems for Engineers
Course Number: INFO7225.35313.202130
Term and Year: Summer semester, 2022
Credit Hour: 4

Instructor Information

Full Name: Shiaoming Shi, Ph.D., MBA
Email Address: s.shi@northeastern.edu; 230 ISEC (office location)
Office Hours: Due to Covid19, all office hours will be conducted online through Microsoft Teams. Please book an appointment from the following link (Available on Mon., Wed., and Thurs. from 12 pm to 1:30 pm):
<https://outlook.office365.com/owa/calendar/NortheasternUniversity1878640@northeastern.onmicrosoft.com/bookings/>
Teaching Assistant: Vicky Cheng <cheng.wei@husky.neu.edu> (please see course announcement for TA office hours)

Technical/Course Materials Requirements

- **Textbook 1: Principles of Accounting, Volumn 1, Financial Accounting** (an openstax textbook available for free at <https://openstax.org/details/books/principles-financial-accounting>)
- **Textbook 2: Principles of Accounting, Volumn 2, Managerial Accounting** (an openstax textbook available for free at <https://openstax.org/details/books/principles-managerial-accounting>)
- **Textbook 3: Core Concepts of Accounting Information Systems**, 14th Edition, Mark G. Simkin, James L. Worrell, Arline A. Savage | ISBN: 978-1-119-37354-4 | February 2018 | Rent or buy a copy at <https://www.wiley.com/en-us/Core+Concepts+of+Accounting+Information+Systems%2C+14th+Edition-p-9781119373544>
- Software or Hardware students need to complete this cours: none

Course Description/Prerequisite

Covers the latest engineering principles necessary for building complex software systems that comply with recognized standards in the financial industry. With automated business processes today, risk and responsibility are shifting to information technology (IT) systems. Offers students an opportunity to learn how to incorporate information-based controls related to the financial industry that signal trouble, detect violations, and provide accountability, as well as a working approval process. Emphasizes software design. Seeks to help engineers construct complex software from a sophisticated engineering perspective. Examines how to put together cutting-edge organizational systems that people in the financial world can put to good use. Designed to prepare students for jobs in the building, maintaining, and employment of such information systems.

Levels: Graduate

Schedule Types: Lecture

Grad Engineering - Multidiscpl Department

Course Attributes:

GSEN Information Systems

Student Learning/Course Outcomes (SLOs)

Demonstration of excellence and student capacity in the student outcomes listed below will be assessed regularly throughout the whole semester in class participation, homework assignments, quizzes, and exams. This course is designed so that at its completion, students will be able to perform the following:

- Apply a working knowledge of the fundamentals of accounting, finance, tax, internal controls, and budget development to specific fact patterns and problem sets;
- Develop and present financial statements for a software development or related entity;
- Become familiar with accounting information systems and various business processes;
- Communicate verbally and in writing about key terminology relating to Accounting, Finance, Tax, Internal Controls, and Budget;
- Recognize the challenges and issues facing management with respect to Accounting, Finance, Tax, Internal Controls, and budget development.

Course Activities and Assignments

This course includes the following required activities and assignments:

- **Lectures:** Because this course is lecture-based, you will benefit most by attending and participating in the class periods. I will endeavor to make the lectures interactive and in-class exercises will be given to reinforce your understanding of the material.
- **Reading assignments** to accompany the lectures are listed in the “Class Schedule” section below.
- **Homework assignments** are given for each module. Complete the assignments independently. Review course material and complete the relevant problems after each class session. Do not wait till the end of the module to start the homework.

- **Quizzes:** Quizzes in multiple-choice format will be given throughout the semester to assess your understanding and retention of the material in the reading assignments and lectures.
- **Examination:** At the end of semester, you will be assessed on your understanding of specific course topics through examination. Since the principles and concepts in this course are interrelated and often build off each other, a comprehensive final exam will be given at the end of the semester. The exams will be administered during the final exam period designated by the University. The final exam schedule will be announced at least one week in advance on the course Canvas site. Taking the exam in advance is permissible under very special circumstances with the approval of the instructor. Please contact me if the need arises, but keep in mind that you should plan on being at each course lecture (**do not make travel plans that conflict**).

Attendance Policy

For everyone's health and safety, please strictly adhere to the University's Covid-19 policy. My goal is to teach as many classes on ground as possible. Students will be expected to attend in person, unless they have opted to attend all classes remotely for health, safety, or other COVID-related reasons. If on ground enrollment exceeds social distancing room capacity for any class, students will alternate between on ground and remote attendance. Not all classrooms are equipped with NUFlex technologies. Should you decide to come to the classroom, you will need to bring your laptop with headphones to the classroom in order to participate in-class activities (such as polling, chat and discussion, breakout rooms, etc.) via Zoom.

Each class will be recorded and posted on Canvas the same day or the next day. However if you cannot come to the classroom, I strongly encourage you to participate via Zoom in the live, synchronous class during which you will be able to ask questions and interact with me and the rest of the class. Students are expected to complete course readings, participate in class discussions or other learning activities in order to make the most of the class time.

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus or specified on course Canvas site.

Students must communicate with the faculty or TA prior to the deadline if they anticipate work will be submitted late.

Work submitted late without prior communication with and approval from faculty or TA will not be graded.

Email Etiquette

Please see the following article on email etiquette:

<https://www.insidehighered.com/views/2015/04/16/advice-students-so-they-dont-sound-silly-emails-essay>

Guarding your reputation is extremely important. Emails live in the cloud forever and can be easily forwarded. Don't write an angry email that you will regret later.

Grading/Evaluation Standards

We (instructor, TA, and grader) will try our very best to grade your work fairly. Sometimes you may feel that the grade you received is unfair. If this is the case, you have one week from the time the grade is returned to email me with a case for extra points. You must include detailed, point-by-point,

reasoning on why you believe your work was graded incorrectly. Please clearly state in your email exactly how many points you believe you should have received. Lectures (during, before, and after) and office hours are not the time to dispute grades. Note that putting in effort does not guarantee you a good grade. All students are working hard and putting in effort. Sometimes work that you put a lot of effort into will be wrong or severely lacking. It is our job to grade your work with sufficient feedback so that you can improve, not to give you a grade just because you have tried hard.

Sometimes mistakes are made in the grading of your work. If points were calculated incorrectly or if a correct answer was marked incorrect, then please notify the TA or grader and CC me via email. We will happily correct the mistake.

Grade Scale

| | | | | |
|------------|----|------------|----|--------------------------|
| 90.0-100% | A | 72.1-74.9% | B- | |
| 85.0-89.9% | A- | 68.1-72.0% | C+ | |
| 80.0-84.9% | B+ | 64.1-68.0% | C | |
| 75.0-79.9% | B | 60.0-64.0% | C- | 59.9% or below: F |

Grade Breakdown:

| | |
|-----------------------------|------------|
| Class participation | 5% |
| Homework assignments | 30% |
| Quizzes | 30% |
| Final exam | 35% |

Course Schedule (Tentative, subject to adjustment)

| Week | Date | Lecture # | Topic | Reading | Assignment |
|--------|---------------|-----------|--|--|--|
| | | | | | |
| | | | Module 1: Financial Accounting 101 | | |
| Week 1 | Sat., Jan. 23 | 1 | 1. Course introduction; 2. Accounting Information Flow; 3. Introduction to Financial Statements | Textbook 1, chapters 1 and 2 | Homework 1a and 1b assigned on Canvas |
| | | | | | |
| Week 2 | Sat., Jan. 30 | 2 | Analyzing and Recording Business Transactions | Textbook 1, chapter 3 | Practice quiz (no grade), covering material from class 1; HW1 |
| | | | | | |
| Week 3 | Sat., Feb. 6 | 3 | 1. Accrual-basis Accounting; 2. Preparation of Financial Statements (FSs); 3. FS Analysis (FSA) | Textbook 1, chapter 4 sections 4 and 5 (ch4.4, 4.5); "FSA" section | Homework 1a due Friday, Feb. 5 |
| | | | | | |

| | | | | | |
|---------|---------------|----|---|--|---|
| Week 4 | Sat., Feb. 13 | 4 | 1. Merchandising Transactions: Accounting for Cost of Goods Sold; 2. Long-lived Assets Accounting | Textbook 1, chapter 6.1, 6.2; ch10.1, 10.2; ch11.1, 11.2 | Homework 1b due Friday, Feb. 19 |
| | | | | | |
| | | | Module 2: Managerial Accounting 101 | | |
| Week 5 | Sat., Feb. 20 | 5 | 1. Building Blocks of Managerial Accounting; 2. Break-Even Analysis | Textbook 2, chapters 1, 2, & 3.1-3.3 | Quiz 1 (covering module 1); Homework 2 assigned on Canvas |
| | | | | | |
| Week 6 | Sat., Feb. 27 | 6 | 1. Budgeting; 2. Short-term Decision Making | Textbook 2, chapters 7 and 10 | Homework 2 |
| | | | | | |
| Week 7 | Sat., Mar. 6 | 7 | Capital budgeting evaluation/project appraisal techniques | Textbook 2, chapter 11 | Homework 2 due Friday, Mar. 12 |
| | | | | | |
| | | | Module 3: Accounting Information Systems (AISs) | | |
| Week 8 | Sat., Mar. 13 | 8 | 1. AISs and the Accountant; 2. Accounting on the Internet; 3. Information Technology and AISs | Textbook 3, chapters 1, 2, and 3 | Quiz 2 (covering module 2); Homework 3 (HW3) assigned on Canvas |
| | | | | | |
| Week 9 | Sat., Mar. 20 | 9 | 1. Accounting and Data Analytics; 2. Integrated Accounting and Enterprise Software | Textbook 3, chapters 4 and 5 | Homework 3 (HW3) |
| | | | | | |
| Week 10 | Sat., Mar. 27 | 10 | Documenting Accounting Information Systems | Textbook 3, chapter 12 | Homework 3 (HW3) |
| | | | | | |
| Week 11 | Sat., Apr. 3 | 11 | Developing and Implementing Effective AISs | Textbook 3, chapter 13 | HW3 due Friday, Apr. 9 |
| | | | | | |

| | | | | | |
|---------|-----------------|----|---|--------------------------------|--|
| | | | Module 4: Internal Control Systems; Information Technology Auditing; Common Business Processes | | |
| Week 12 | Sat., Apr. 10 | 12 | 1. Internal Control Systems and Risk Management; 2. Computer Controls for Organizations and AISs | Textbook 3, chapters 6 and 7 | Quiz 3 (covering module 3); Homework 4 assigned on Canvas |
| | | | | | |
| Week 13 | Sat., Apr. 17 | 13 | 1. Cybercrime, Fraud, and Ethics; 2. Information Technology Auditing | Textbook 3, chapters 10 and 11 | Homework 4 |
| | | | | | |
| Week 14 | Sat., Apr. 24 | 14 | Accounting Information Systems and Business Processes; <i>Last day of spring classes</i> | Textbook 3, chapters 8 and 9 | Homework 4 due Monday, Apr. 26 |
| | | | | | |
| | | | Final Week | | |
| Week 15 | Apr. 26 - May 1 | | Final exam week: Time and date of final exam will be announced in week 14 | | Quiz 4 (M, 4/26; covering module 4); Final Exam (time and date TBD) |
| | | | | | |
| Week 16 | Mon., May 3 | | <i>First day of summer break;</i> <i>Faculty grade deadline at 9:00 a.m. for spring classes</i> | | <i>Enjoy your summer break!</i> |

Academic Integrity

A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, examinations of whatever kind, collaborative work, the use of study aids, the

appropriateness of assistance, and other issues. Students are responsible for learning the conventions of documentation and acknowledgment of sources in their fields. Northeastern University expects students to complete all examinations, tests, papers, creative projects, and assignments of any kind according to the highest ethical standards, as set forth either explicitly or implicitly in this Code or by the direction of instructors.

Go to <http://www.northeastern.edu/osccr/academic-integrity-policy/> to access the full academic integrity policy.

Student Accommodations

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability.

For more information, visit <http://www.northeastern.edu/drc/getting-started-with-the-drc/>.

Library Services

The Northeastern University Library is at the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information and for Education specific resources, visit <http://subjectguides.lib.neu.edu/edresearch>.

Diversity and Inclusion

Northeastern University is committed to equal opportunity, affirmative action, diversity and social justice while building a climate of inclusion on and beyond campus. In the classroom, member of the University community work to cultivate an inclusive environment that denounces discrimination through innovation, collaboration and an awareness of global perspectives on social justice.

Please visit <http://www.northeastern.edu/oidi/> for complete information on Diversity and Inclusion

TITLE IX

Title IX of the Education Amendments of 1972 protects individuals from sex or gender-based discrimination, including discrimination based on gender-identity, in educational programs and activities that receive federal financial assistance.

Northeastern's Title IX Policy prohibits Prohibited Offenses, which are defined as sexual harassment, sexual assault, relationship or domestic violence, and stalking. The Title IX Policy applies to the entire community, including male, female, transgender students, faculty and staff.

In case of an emergency, please call 911.

Please visit www.northeastern.edu/titleix for a complete list of reporting options and resources both on- and off-campus.