

Syllabus for APS-6100

COST ESTIMATION AND FINANCIAL MANAGEMENT FOR ENGINEERS AND TECHNOLOGISTS

COURSE DESCRIPTION

Decisions on large and small programs, whether in government or industry, always have a financial component and financial impacts. This course will provide students with an understanding of the financial aspects of decision making. The focus will be on the application of cost estimates and cost benefit analyses to program and financial management, budget preparation and justification, the understanding and use of financial statements, and program control. In addition, the course will help participants to become informed consumers of cost estimates and cost benefit analyses. Being informed includes evaluating the strengths and weaknesses of the cost benefit analysis approach as well as the role of risk and uncertainty, comprehending sensitivity analysis, and knowing the right questions to ask when you are the recipient of a cost benefit analysis.

COURSE OBJECTIVES

After completing this course, you should be able to:

- CO1** Analyze the processes and structures of organizational governance and management.
- CO2** Interpret basic financial statements that are used for decision making in organizations for investments or evaluating the financial strength of an organization.
- CO3** Examine and apply common techniques and tools for project cost estimation and analysis.
- CO4** Recommend tools and skills for effective financial and trade-off analysis of engineering and technology projects.
- CO5** Develop skills for comparing and evaluating projects and alternatives using economic figures of merit.
- CO6** Perform the basic elements of project cost control and variance analysis.

COURSE MATERIALS

You will need the following materials to complete your coursework. Some course materials may be free, open source, or available from other providers. You can access free or open-source materials by clicking the links provided below or in the module details documents. To purchase course materials, please visit the [University's textbook supplier](#).

Required Textbook

- Mislick, G. K., & Nussbaum, D. A. (2015). *Cost estimation: Methods and tools*. Hoboken, NJ: John Wiley & Sons.
ISBN-13: 978-1118536131

COURSE STRUCTURE

Cost Estimation and Financial Management for Engineers and Technologists is a three-credit, online course consisting of **five** modules. Modules include an overview, topics, learning objectives, study materials, and activities. Module titles are listed below.

- **Module 1: Cost Estimating and Financial Management**
Course objectives covered in this module: CO1
- **Module 2: Financial Reports**
Course objectives covered in this module: CO2
- **Module 3: Cost Estimating**
Course objectives covered in this module: CO3
- **Module 4: Cost Benefit Analysis**
Course objectives covered in this module: CO4, CO5
- **Module 5: Special Topics**
Course objectives covered in this module: CO3, CO6

ASSESSMENT METHODS

For your formal work in the course, you are required to participate in online discussion forums, complete written assignments, take a proctored midterm examination, and complete a final project. See below for details.

Consult the Course Calendar for due dates.

Discussion Forums

In addition to an ungraded Introductions Forum, you are required to participate in three graded online class discussions.

Communication with your mentor and among fellow students is a critical component of online learning. Participation in online class discussions involves two distinct activities: an initial response to a discussion question and at least two subsequent comments on classmates' responses.

All of these responses must be substantial. Meaningful participation is relevant to the content, adds value, and advances the discussion. Comments such as "I agree" and "ditto" are not considered value-adding participation. Therefore, when you agree or disagree with a classmate or your mentor, state *and support* your position.

You will be evaluated on the quality and quantity of your participation, including your use of relevant course information to support your point of view, and your awareness of and responses to the postings of your classmates. Remember, these are discussions: responses and comments should be properly proofread and edited, mature, and respectful.

Written Assignments

You are required to complete **five** written assignments. The written assignments are on a variety of topics associated with the course modules.

For Written Assignments 4 and 5, you will be working with a partner and using the Edison Live! platform for your cooperative work. Although you will work together on the problems, each of you should submit your identical solutions within the appropriate assignment link.

Final Project Assignments

You are required to complete **six** integrated assignments that make up your final project. You will also work with your partner and use the Edison Live! platform for this work. As with Written Assignments 4 and 5, you will work together with your partner to find a solution, but each of you should submit your identical solutions within the assignment link.

Project Assignment 3 consists of a white paper that summarizes and presents your results.

GRADING AND EVALUATION

Your grade in the course will be determined as follows:

- **Discussion forums (4)**—20 percent
- **Written assignments (5)**—30 percent
- **Final project assignments (6)**—50 percent
 - **Assignments 1, 2, 4, 5, 6**—30 percent
 - **Assignment 3**—20 percent

All activities will receive a numerical grade of 0–100. You will receive a score of 0 for any work not submitted. Your final grade in the course will be a letter grade. Letter grade equivalents for numerical grades are as follows:

A	=	93–100	B	=	83–87
A–	=	90–92	C	=	73–82
B+	=	88–89	F	=	Below 73

To receive credit for the course, you must earn a letter grade of C or higher on the weighted average of all assigned course work (e.g., assignments, discussion postings, projects). Graduate students must maintain a B average overall to remain in good academic standing.

STRATEGIES FOR SUCCESS

First Steps to Success

To succeed in this course, take the following first steps:

- Read carefully the entire Syllabus, making sure that all aspects of the course are clear to you and that you have all the materials required for the course.
- Take time to read the entire Online Student Handbook. The Handbook answers many questions about how to proceed through the course and how to get the most from your educational experience at Thomas Edison State University.
- Familiarize yourself with the learning management systems environment—how to navigate it and what the various course areas contain. If you know what to expect as you navigate the course, you can better pace yourself and complete the work on time.
- If you are not familiar with web-based learning be sure to review the processes for posting responses online and submitting assignments before class begins.

Study Tips

Consider the following study tips for success:

- To stay on track throughout the course, begin each week by consulting the Course Calendar. The Course Calendar provides an overview of the course and indicates due dates for submitting assignments, posting discussions, and scheduling and taking examinations.
- Check Announcements regularly for new course information.

Using AI Ethically: A Guide for TESU Students

TESU's [Academic Code of Conduct](#) permits student AI use in support of their writing and research process--not as a replacement for original writing. Document AI use with an acknowledgment statement at the end of each assignment, noting the tools and prompts used. Cite any AI-generated content on the References page. Please review [Using AI Ethically: A Guide for TESU Students](#) for more detailed information.

COMMITMENT TO DIVERSITY, EQUITY, AND INCLUSION

Thomas Edison State University recognizes, values, and relies upon the diversity of our community. We strive to provide equitable, inclusive learning experiences that embrace our students' backgrounds, identities, experiences, abilities, and expertise.

ACCESSIBILITY AND ACCOMMODATIONS

Thomas Edison State University adheres to the Americans with Disabilities Act (ADA, 1990; ADAAA, 2008) and Section 504 of the Rehabilitation Act of 1973. The Office of Student Accessibility Services (OSAS) oversees requests for academic accommodations related to disabilities; a student who is pregnant, postpartum, or a student parenting a newborn who is not the birth parent [as covered under NJSA18A]; and students requesting academic accommodation for a short-term/temporary illness and/or injury. Information can be found on the [Office of Student Accessibility Services](#) webpage and questions can be sent to ADA@tesu.edu.

ACADEMIC POLICIES

To ensure success in all your academic endeavors and coursework at Thomas Edison State University, familiarize yourself with all administrative and academic policies including those related to academic integrity, course late submissions, course extensions, and grading policies.

For more, see:

- [University-wide policies](#)
- [Undergraduate academic policies](#)
- [Undergraduate course policies](#)
- [Graduate academic policies](#)
- [Graduate course policies](#)
- [Nursing student policies](#)
- [Nursing graduate student policies](#)
- [International student policies](#)
- [Academic code of conduct](#)