

Fall 2020

IE 335-101: Engineering Cost Analysis and Control

Dielanda Dumay

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IE 335-101 ENGINEERING COST ANALYSIS & CONTROL



T 6:00-8:50pm – Online WebEx

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Fall 2020
908-686-8919

BSIE/ME Program Educational Objectives

1. Program graduates use the fundamental principles and major areas of Industrial Engineering in their professional practice.
2. Program graduates are lifelong learners, pursuing graduate education, and professional growth in Industrial Engineering and related fields.
3. Program graduates pursue diverse career paths and advance in a variety of industries.

BSIE/ME Student Outcomes

- A. An ability to apply knowledge of mathematics, science, and engineering
- B. An ability to design and conduct experiments, as well as to analyze and interpret data
- C. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- D. An ability to function on multi-disciplinary teams
- E. An ability to identify, formulate, and solve engineering problems
- F. An understanding of professional and ethical responsibility
- G. *An ability to communicate effectively*
- H. *The broad education necessary to understand the impact of engineering solutions in a global and societal context*
- I. *A recognition of the need for, and the ability to engage in lifelong learning*
- J. *A knowledge of contemporary issues*
- K. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

IE 335 Outcomes of Instruction:

- 1 Learn the terminology and principles of accounting and be able to record transactions in the appropriate accounts (f, j, h).
- 2 Be able to analyze financial statements using a variety of ratios (f, j, h).
- 3 Learn cost/volume relationships and use cost drivers to compute break-even points or determine profit/loss levels (h, i, j).
- 4 Be able to do budgeting and activity-based costing (h, i, j).
- 5 Demonstrate their possession of written and oral communication skills (g, i, j).
- 6 Use other than cost considerations in economic analysis (g, i, j).

TEXT: Horngren, C.T., et.al., *Introduction to Management Accounting*, 16th Edition, Pearson, 2014.

Also see Journals such as: *Management Accounting*, *Cost Management*, *Cost Engineering*, *Harvard Business Review*, *Sloan Management Review*, *Manufacturing Engineering*, and *Industrial Engineering*.
www.prenhall.com/horngren for student resources made available from publisher with text.

COURSE OUTLINE

Week	Date	TOPIC	Chapter/Meeting Place/Homework Problems
1	(9/1)	Introduction- Engineering Cost Analysis Overview- Application, skills & knowledge required. Interaction	1 (Online/WebEx)
2	(9/15)	Basics of financial/cost management. Elements of financial accounting & development of income statements & balance sheets.	15, Appendix 15A, 15B (Online/WebEx) (Assignments posted on Canvas)
3	(9/22)	Continuing on the subject matter of Week 2 - Cash flow statements. Inventory methods.	16, Appendix 16A (Online/WebEx) (Assignments posted on Canvas)
4	(09/29)	Understanding and analysis of financial statements, Ratio analysis, Difficulties of income measurement	17 (Online/WebEx) (Assignments posted on Canvas)
5	(10/06)	TEST # 1 – Term Paper Group Topic Choice	Chapter 1, 15, 16, 17 (Online)
6	(10/13)	Cost- Volume relationships, Cost drivers, Fixed & variable costs, Breakeven points, Volume profit	2 (Online/WebEx) (Assignments posted on Canvas)
7	(10/20)	Development and behavior, Methods of measurement, Application of regression analysis.	3, Appendix 3 (Online/WebEx) (Assignments posted on Canvas)
8	(10/27)	Cost management systems, Cost classification, Job order process, Activity based, Cost driver, Identification and activity based management	4 (Online/WebEx) (Assignments posted on Canvas)
9	(11/03)	Cost analysis- Marketing applications, Relevant costs, Special orders, Product addition or deletion, Target costing, Pricing decision. Term Paper References Due - Library Research Assignment	5 (Online/WebEx) (Assignments posted on Canvas)
10	(11/10)	TEST # 2	Chapter 2, 3, 4, 5 (Online)
11	(11/17)	Cost analysis, Production & operations management application, Opportunity costs, Make or buy, Joint product costs, Sunk & unit costs. Flexible budgets,	6 (Online/WebEx) (Assignments posted on Canvas)
12	(11/24)	Flexible budgets, Standard cost & Variance analysis	7 & 8 (Online/WebEx) (Assignments posted on Canvas)
13	(12/01)	Cost allocation- Activity based costing, Job order cost systems. Final Exam Review	12 (Online/WebEx) (Assignments posted on Canvas)
14	(12/08)	TERM PAPER PRESENTATIONS	Online/WebEx
15	(12/15)	FINAL EXAM	Chapter 6, 7, 8, 12 (Online)

***Please read the chapters prior to class**

Assessment of Learning/Grades

1. Participation – Participation in class discussions is essential to learning and you will be asked to communicate your thinking via several formats (aloud, homework, in class assignments). Participation will be assessed in both lecture and homework participation.

2. Homework – There will be several homework assignments throughout the semester that will require slightly more in-depth work on a topic and application of knowledge. Weekly assignment is expected to be done individually.

3. Group Term paper – Write a term paper that analyzes the cost and impacts of your energy source on the economy overall. The economy may be that of the US (probably you will have more data on this) or the world. (See more detail on term paper information)

4. Exams – There will be three exams that will cover the application and understanding of the material covered in the course. These exams will also require you to apply the skills that we will emphasized.

5. Peer Review – Term Paper Group Evaluation of each person's work or performance within the group

Academic Dishonesty: The course has a zero-tolerance policy for academic dishonesty, including plagiarism and cheating. Instances of dishonesty will be punished by a zero on the assignment and consultation with the office of the Dean of Students to determine if further action is required. If you have any questions about what constitutes plagiarism or cheating, please ask us or refer to the academic integrity code: www.njit.edu/academics/integrity.php. (See Honor Code)

Course Grade (Subject to be adjusted)

Your grade for this course will be based on participation, exams, assignments, and projects.

PERCENTAGE BREAKDOWN

Attendance/HW/Course Participation	10%
Exams (1, 2, 3)	70% (20, 25, 25% Respectively)
Term Paper	20% (1/5 of which devoted exclusively on the quality and suitability of references as well as peer review)

*****Attendance Policy – More than two unexcused absences will result in a failure grade**