

Industrial and Management Systems Engineering IENG 578

Costing & Estimating for Manufacturing

Fall Semester 2010

Revised

Textbook: Estimating and Costing for the Metal Manufacturing Industries
 Creese, Adithan & Pabla
 Marcel Dekker 1992
 SEER Manual – Cost Designer for Parts, Process, and Assembly- Users Manual
 PRICE True Planning – Users Manual

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Week	Topic	Chapter*	Problems Due(Tues)	Make-Up Class
1	Introduction to Cost Estimating (CAPE) Costs of Estimates Work Breakdown Structure	1,2 AACE Recommended Practices 17,18,19 Cost Engineering Jan 1998		
2	Costing, Analysis of Overhead Expenses Project - Due Nov 18(wk13)	3,4	Assigned HW Problems	Project Assignment and data collection
3	Break-even Analysis(Quantity Based & Time Based) Facility Costing Model – Spreadsheet due Sept 28(wk6)	5,14	Ch 3,4	PRICE1
4	Cost Indexes, Cost Capacity Factors, Improvement Curves Cost Capacity Equation/Improvement Curve Due Oct 7(wk7)	13	Ch 5, 14	PRICE1
5	Costing for Materials with Design Considerations Conceptual Cost Estimating Techniques	7,8	Ch 13	PRICE 2
6	Conceptual Cost Est(con't) Machining	9	Facility Cost Model Due(Sept 28) 7,8	SEER 1
7	Machining	9, Appendix	Cost Capacity Eqn(Due Oct 7)	SEER 2
8	Machining, Joining	10	Ch 9 Assigned	
9-10-11	Project Work			
12	Basic Costing for Joining & Casting Processes	10, 11	Ch 10	
13	Basic Costing for Casting & Deformation Processes	11,12	SEER-PRICE Ch 11	Due Nov 18
14	SEER/PRICE Project Presentations		Ch 12	
15	Project Presentations & Course Evaluations			
16	Final Exam Friday Dec 17 15:00-17:00(3-5:00)			

Homework: Homework is due on Tuesdays. Projects are due on assigned day. Homework is considered in borderline grading cases. Students are expected to do all problems at the end of each chapter in the text and any additional problems assigned. Students will present homework solutions in class and quizzes may be given on selected materials.

The PRICE-SEER periods are make-up periods for the project work during weeks 9-11. The time will be selected the first week of class.

Students are expected to become student members of AACE, International during August-September of this year. Exams/quizzes are open-book, but students are only permitted the use of the text book & formula sheets on the exams. No book sharing or paper copies are permitted during the quizzes/exams. Formula sheets will be provided for quizzes/exams.

Grading	IMSE 578	Letter Grade & Numerical Conversion
Final Exam(Comprehensive)	35	A \geq 90
Quizzes	25	90 > B \geq 80
Cost Capacity/Learning Curves	5	80 > C \geq 70
Facility Cost Model	5	70 > D \geq 60
SEER/PRICE Project	30	F < 60

There will be no make-up quizzes. The highest five grades will be averaged for the quiz grade and six quizzes will be given. The quizzes may be unannounced or announced.

Class Attendance: A maximum of four absences(excused/unexcused) is permitted per semester after the first week of classes. Two points will be deducted from the semester grade point average for each additional absence.

Cost Capacity Equation Development – Each student will be required to develop two cost capacity or improvement equations from a manufacturing process. All data used, sources of information, and method of analysis will be included in the report. The report will include log-log plots of the data and relationship obtained. The best-fit should also be considered. This is an individual student project. This is due Thursday, October 7 and may be submitted early.

Facility Cost Model – Students will make a computer program to estimate the costs for a new facility based upon the information in Chapter 14. A test set of data will be given to validate the model. This is an individual student project. This is due Thursday September 28 and may be submitted early.

SEER/PRICE Project – Student teams(2-3 members) will use SEER and PRICE Programs to estimate costs for problems which are assigned. These will be investigated using both top-down and bottom up models of SEER and PRICE. Three reports will be prepared; one for SEER, one for PRICE, and a combined report for the instructor and two copies will be handed in. One copy will be forwarded to SEER and one to PRICE.

The project reports are due NOV 18. This report will include the model assumptions, the inputs used, a discussion of the model results, and a print out of the results obtained from the program.

Educational Statements

Non-discrimination Statement: I expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination(race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin) in this course. If you expect any type of accommodation in order to participate in this class, please make the appropriate arrangements with Disability Services(293-6700) and advise me of those arrangements. Suggestions for improving the positive learning environment in this class will be appreciated.

Expected Learning Outcomes

- 1) Students will be familiar with a commercial cost estimating programs (PRICE or SEER)and be able to use the software.
- 2) Students will be able to determine break-even points for time based and quantity based models.
- 3) Students will be able to utilize improvement curves, cost indices, and cost capacity curves.
- 4) Students will be able to work basic costing problems for casting, joining, deformation, and machining processes
- 5) Students will be able to prepare reports and present data to peers and superiors.
- 6) Students will be able to develop a facility cost model.

Days of Special Concerns Statement: Students must notify the instructor by the end of the second week of classes or prior to the first Day of Special Concern, whichever is earlier, regarding Day of Special Concern observances that will affect their attendance. The approved Special Days of Concern are listed in the Schedule of Courses.

Academic Dishonesty Statement

WVU expects that every member of its academic community shares the historic and traditional commitment to honesty, integrity, and the search for truth. Students participating in academic dishonesty activities may receive penalties such as an unforgivable F for the course or a grade of zero. Academic dishonesty is defined to include but is not limited to any of the following:

1. **Plagiarism** is defined in terms of proscribed acts. Students are expected to understand that such practices constitute academic regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed. Plagiarism includes, but is not limited to: submitting, without appropriate acknowledgment, a report, notebook speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been copied in whole or in part from the work of others, whether such source is published or not, including(but not limited to) another individual's academic composition, compilation, or other product, or commercially prepared paper.
2. **Cheating and dishonest practices** in connection with examinations, papers, and projects, including, but not limited to:
 - a. Obtaining help from another student during examinations.
 - b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his or her own.
 - c. The unauthorized use of notes, books or other sources of information during examinations. The unauthorized use of calculators or computers programmed with formulas, equations, or notes which have not been approved by the instructor for your use on the exam. **Computers and programmable calculators are not permitted for the exams.**
 - d. Obtaining without authorization an examination or any part thereof.
3. **Forgery, misrepresentation or fraud:**
 - a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.
 - b. Use of University documents or instruments of identification with intent to defraud.
 - c. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or University course.
 - d. Knowingly presenting false data or intentionally misrepresenting one's records for personal gain.
 - e. Knowingly furnishing the results of research projects or experiments for the inclusions in another's work without proper citation. This includes copying of previous/current student projects and reports(or portions thereof) and submitting them for evaluation.
 - f. Knowingly furnishing false statements in any University academic proceeding.