

Drexel University  
School of Biomedical Engineering, Science and Health Systems  
**Junior Design Sequence**

**TITLE:** Junior Design Seminar II  
**COURSE:** BMES 382  
**CRN:** TBD  
**TERM:** Winter and Summer Quarters  
**CREDITS:** 2  
**DATES:** TBD  
**TIMES:** One hour of lecture and 2 hours of recitation per week  
**PRE-REQ:** Junior status in engineering

### Course Objectives

This is the second course in a two-course sequence intended to present the basics of engineering design, project management, product development and translational research. This second course focuses on project management and quality control. The course uses a case-study approach to investigate the do's and don't of project management, quality control and product evaluation.

### Required Texts

Pang, P.N.T. (2003). *The Essentials of Quality Control Management*. Trafford Publishing: Victoria, BC Canada (ISBN#1412013623).

Wysocki, R and McGary, R. (2003). *Effective Project Management, 3<sup>rd</sup> Edition*. Wiley Publishing: New York (ISBN#0471432210)

### Course Instruction

- *Lecture* – 50-minute lectures given each week cover specific aspects of project management, quality control, and product evaluation.
- *Recitation* – 110-minute recitations given each week will use case studies to elaborate on the lecture topics.

### Assignment Policy

- *Readings Assignments*– Selected reading assignments will be given on a weekly basis. The textbooks along with articles gathered from the Web will be the source of assigned readings. However, students are encouraged to cross-reference topics in supplemental references.
- *Homework* – Homework problems will be periodically assigned. Assignments are to be completed on an individual basis unless otherwise indicated.
- *Participation* – Students are expected to attend class regularly, to actively participate in class discussions and to contribute effectively to work group activities.

- *ePortfolio* – Students will create an electronic portfolio of materials learned during the course. This portfolio will serve as a preliminary personal manual for Senior Design.
- *Project* – Students working in teams of 4-5 will be required to submit a preliminary project plan and evaluation scheme for the design created in term one.

### Grading

Homework	25%
Participation	25%
ePortfolio	25%
Final Project	25%

<u>Week</u>	<u>Topic</u>	<u>Reading</u>
<b>I. Project Management</b>		
1	What is traditional project management?	Wysocki&McGary, Chpt. 1,2
2	Initial project planning and The Work Breakdown Structure (WBS)	Wysocki&McGary, Chpt. 3,4
3	Estimating duration, requirements, and cost: Constructing a Project Network Diagram	Wysocki&McGary, Chpt. 5,6
4	Finalizing schedule and costs	Wysocki&McGary, Chpt. 7
5	Recruiting, organizing and managing the project team	Wysocki&McGary, Chpt. 8.9
6.	Monitoring and controlling progress: Critical Chain approach	Wysocki&McGary, Chpt. 10,12
<b>II. Quality Control and Project Evaluation</b>		
7	Quality Systems and Control	Pang, Chpt. 3
8	Statistical Methods	Pang, Chpt. 4
9	Statistical Process Control	Pang, Chpt. 5, 6
10	Strategic Planning	Pang, Chpt. 7