

**DESIGN OF PRODUCTIVE SYSTEMS – I**  
**Fall 2014**

<b>Course:</b>	<b>IENG 471</b>
<b>Semester:</b>	<b>Fall 2014</b>
<b>Number of credit hours:</b>	3
<b>Description:</b>	The integration of industrial engineering principles in the design of productive systems. Emphasis is on the analysis of different systems for productivity management.
<b>Prerequisite:</b>	Senior standing in Industrial Engineering.
<b>Course Material:</b>	Instructional materials will be provided to support various topics covered in the course.
<b>Instructor:</b>	<b>Jack Byrd, Jr., PhD., PE</b> Professor, IMSE Department Email: <a href="mailto:jabyrd@mix.wvu.edu">jabyrd@mix.wvu.edu</a> Phone: 293-3612 x 1 <b>Amanda Keener</b> Assistant Email: <a href="mailto:jabyrd@mix.wvu.edu">jabyrd@mix.wvu.edu</a> Phone: 293-3612 X 1

**Course Goals:**

1. To provide students an experience which will test their ability to practice Industrial Engineering
2. To provide students with the methods needed to conceptualize, plan, and execute an industrial engineering project.
3. To prepare students to document their project results in a written report and to develop a strategy for gaining acceptance of their project results.
4. To prepare students to communicate in the work environment they will experience when they graduate.
5. To help students create a career plan.
6. To expose students to their professional responsibility to society.
7. To acquire experience with helping others achieve success

**Student Learning Objectives:**

Upon completing the course, the student will be able to

1. Develop a project plan including tasks to be completed design tools to be used, collection and analysis of information, testing of alternatives, and the development of a project report.
2. Prepare a project report summarizing the project work with recommendations for action.
3. Prepare and give a technical presentation.
4. Develop a career plan and manage the job search process.

***Course Contribution to Professional Component:***

Engineering Design – 100%

***Course Relationship to Program Educational Outcomes: The course relates strongly to the following education outcomes***

1. The course enables students to develop a solution strategy for an actual design problem and then execute this strategy to achieve desired results. (Outcome 1)
2. The course asks students to integrate their knowledge of engineering science and design to provide a solution to an actual organizational problem. (Outcome 2)
3. The course asks students to develop a data collection and analysis strategy, for a design problem. (Outcome 3)
4. The course asks students to use the most appropriate Industrial Engineering tool for a design problem. (Outcome 3)
5. The course teaches students how to write a professional report and give a professional presentation. (Outcome 6)
6. The course assesses the student's ability to be successful in achieving results in a design situation. (Outcome 5)
7. The course helps students develop the professional characteristics that are needed for a successful career, and be prepared to accept professional responsibility. (Outcome 8)
8. Through the internship experience students will learn how to work with others to achieve a successful design outcome. (Outcome 4)

***Grading Elements, Weighting and Scale***

The grade in IMSE 471 will be based upon the following grading elements

- 40% Organization Evaluation—This is an evaluation filled out by the company (sample attached).
- 20% Faculty Advisor Evaluation—This is an evaluation by the faculty mentor (see mentor evaluation criteria below).

- 10% Written Assignments—There will be a number of written assignments, which will be graded. This will include scheduled quizzes.
- 10% Mentoring—This grade is based on an evaluation by you and your advisee.
- 10% Professional and Wellness Development—This grade is based on an evaluation (by your peers and the instructor) of your improvement in specific areas identified as professional and wellness needs.
- 10% Community Service—This grade is based on an evaluation (by you, the

<b>Grading Scale</b>	<b>Faculty Advisor Evaluation</b>
90 - 100%    A	1. Quality of the project
80 - 89%    B	2. Difficulty of the project
70 - 79%    C	3. Project initiatives shown
60 - 69%    D	4. Impact of the project on the organization
< 60%    F	5. Professionalism shown
	6. Project management
	7. Communications with faculty advisor organization served, and the instructor) of your service to a community

With the exception of the written assignments, students will receive minimal feedback on their work until final grades are determined. This grading approach is designed to simulate the performance evaluation system will encounter in a professional career.

### **Homework Policy**

Homework is due on the date assigned. There will be one point taken off (out of 10) for each date the homework is turned in late. Weekly assignments (peer advising and job status) will not be accepted after the week for which they are reporting.

### **Quizzes**

There will generally be a quiz every class period. These are based upon the previous class. They are open notes. If you take good notes, you should do well on quizzes. If you are not in class, you cannot take the quiz.

### **Class Attendance Policy**

Class attendance is mandatory. There will be a deduction of one percentage point from the final grade for each missed class after two missed classes.

### ***Statement of Social Justice***

West Virginia University is committed to social justice. I concur with that commitment. I expect to foster a nurturing learning environment that is based upon open communication, mutual respect and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this, you must make appropriate arrangements through Disability Services (293-6700). They will identify the nature of the accommodation your disability requires.

***Prepared by Jack Byrd, Jr., Phd., PE***

***Date: May 8, 2014***