IENG 493E - New Product & Service Development

Semester: Spring 2020

Time/location: TR 9:30-10:45 am, ESB G84

Number of credit hours: 3

Method of Instruction: Lecture / Project-based Learning

Course Description: This course introduces the new product and services development process including tools, methods, and techniques (e.g., design thinking, 6-3-5, morphological box) that are used by companies and innovators. We will discuss the differences between B2B and B2C product development, impact of new technologies such as IoT and social media, as well as the multi-disciplinary nature of NPSD. The topics covered in this class span several disciplines, incl. marketing, engineering, and operations. The course is designed hands-on and the students will apply their new knowledge in a team environment, developing a new product and/or service over the course of the semester.

Prerequisites: None

Co-requisites by topics: None

Textbook/Lecture: All materials will be provided to students via WVU library online content

Instructor (Lecture):   Dr. Todd Hamrick
Teaching Associate Professor
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Office Hours: TR 9-9:30 and 10:45 – 12:15 (Before and after class). Other times on separate handout, or contact me by email for an appointment.

Contribution of course to meeting the professional component:

Engineering topics: 100%.

Course Learning Objectives:
Students completing this course successfully will:

1. Demonstrate knowledge and practical experience of working in a multidisciplinary new product and service development environment by considering the contributions of different disciplines to product innovation.
2. Demonstrate competences for new product and service development and comprehend the value of the contributions of different disciplines to product innovation such as marketing, industrial design, production and sales.
3. Identify different managerial and engineering tools, methods, and techniques for new product and service development, and apply these methods in the new product and service development process.
4. Develop a new product and/or service throughout the semester using the product and service development tools taught in the course.

Grading:

Assessment	Ind. / group	% of final grade	sub-assessment	% of final grade
Literature Review	Individual	20%	-	20%
Quizzes (highest 5 of 6)	Individual	20%	-	20%
Project	Group	60%	Presentation 1	10%
	Group		Presentation 2	10%
	Group		Final Report	25%
	Group		Final Presentation	15%

Grading Scale:
- A = 90 − 100%
- B = 80 − <90%
- C = 70 − <80%
- D = 60 − <70%
- F = < 60%

Assignments are due on the due date and time assigned. Assignments due in class (whether hard copy or electronic) are due at the beginning of the class on the due date assigned or by the established deadline. Late assignments will not be accepted or graded. Extenuating circumstances may be considered at the discretion of the instructor.

In-Class Quizzes: There will be 6 in-class quizzes throughout the semester. There will be no make up quizzes, but the lowest quiz score will be dropped.

Statement on Attendance: This is a highly participative course, and attendance is mandatory. Students will be permitted three unexcused absences. Unexcused absences cover emergencies incl. medical emergencies, personal reasons, etc. Students are responsible for all material covered in class. Course grade will be lowered by one letter grade for the fourth and for each subsequent unexcused absence. Excused absences are at the sole discretion of the instructor and have to be communicated at least 1 week in advance. Excused absences will not be accepted after the absence was recorded. Possible reasons for excused absences include only those that involve university business (conferences, sporting events) and/or military obligations.

Institutional Policies: This course abides by all University Policies that can be found using the provided link (https://tlcommons.wvu.edu/syllabus-policies-and-statements). These policies include but are not limited to: Academic Integrity Statement; Academic Standards Policy; Accessibility Statement; Adverse Weather Statement; Attendance Policy; Campus Safety Statement; Inclusivity Statement; Incomplete Policy; Sale of Course Material Statement; Sexual Misconduct Statement; Student Evaluation of Instruction Statement

Academic Integrity
The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me BEFORE the assignment is due to discuss the matter. All assignments will be checked for plagiarism via Turnitin and the instructor. Anyone caught engaging in academic dishonesty will face consequences in accordance with WVU Academic Standards Policy.

Tentative Schedule and Topics Covered in Lecture:

Week	Module	Topic*	Misc*
1	1	Introduction to New Product & Services Development	
2		**Concept** - Understanding the Market (opportunity) and Customer Requirements	Quiz 1
3	2	**Concept** - Team Building / Project Management	
4		**Concept** - Concept Generation / Ideation	Quiz 2
5		**Concept** - Evaluation/Selection of concepts	Presentations Part 1 – CONCEPT
6	3	**Design** - Product and Service development / Design Process	
7		**Design** - Design Process / Cost Analysis	Quiz 3
8	4	**Design** - Phase gates (Stage gates) / Entrepreneurship mindset / NPSD business models	
9		**Design -** Product vs. Service / PLM	Quiz 4
-		*Spring Recess March 16th – March 20th, 2020*	
10	5	**Design** - Technical Product & Service development	
11		**Design / Delivery** - Prototyping	Presentations Part 2 – DESIGN Quiz 5
12	6	**Delivery** - Product & Service Launch	
13		**Delivery** - Product & Service Operation	Quiz 6
14		**Delivery** - Product & Service Lifecycle Management	Final presentations
15		Final presentations / Possibly on *Demo Day (April 24th,2020)*	Final presentations

*SUBJECT TO CHANGE AT DISCRESSION OF INSTRUCTOR AT ANY TIME