Program Features

- Project teams are assembled from a pool of students from the UWM College of Engineering & Applied Science representative of the engineering disciplines of Mechanical, Electrical, Industrial, Computer Science, and from the UWM Peck School of Arts representative of the disciplines of Industrial Design and Graphics Arts.
- Each project team is assigned a faculty advisor who works with the team throughout the length of the course.
- The course is co-taught by instructors Dr. Ilya Avdeev, Assistant Professor – Mechanical Engineering, College of Engineering & Applied Science, and Dr. Nathaniel Stern, Associate Professor of Art and Design and Head of Digital Studio Practice, Peck School of the Arts. Drs. Avdeev and Stern have been the course instructors since the Fall 2011 course offering, and prior to that served as the lead faculty mentors for earlier offerings of the course. Dr. Avdeev is also the founder and research leader of UWM’s Advanced Manufacturing and Design Laboratory. Drs. Avdeev and Stern have refined the Product Realization course project selection and team training processes to the point where the selected projects have a high rate of success for producing positive outcomes for both the students and industry partner.
- The course will be taught in the ANSYS Institute for Industrial Innovation (AI3) facility located on the 1st floor of the EMS building. This 2,800 sq-ft facility contains both a formal training space and a “workbench” type design studio space. The training room area is equipped with powerful computer hardware and software that provides state-of-the-art Computer-Aided-Engineering (CAE) capabilities, and includes a versatile A/V presentation system. The design studio space has workbench areas for physical prototype development and assembly, and includes equipment for rapid-prototyping, reverse engineering and rapid product development.
- The course runs for a total of 15 weeks. Over the length of the course each team puts into a project an average of 30 hours per week of engineering time.
- At an industry partner sponsorship fee of only $7,500 per project the Program is a great value (less than $17/hr for creative engineering talent).

Project Qualification and Selection Criteria

- Acceptable projects are types that are product development/improvement or process development/improvement in nature. Examples include: development of a product concept into a product prototype, development of a product improvement into an improved product prototype, development of a new manufacturing process into a prototype of a new manufacturing process, development of a new or improved manufacturing component (a tool, or say fixture) into a component prototype, development of a software concept into a software prototype or development of a software enhancement into an enhanced software prototype. Following are the titles of past projects used in the course:
  - Low Cost Electric Dipstick
  - Solar Powered Street Sign
  - Independent Environmental Sensing Station
  - Low Cost Ground Fault Relay
• The project should be applicable to development by a multidisciplinary engineering team.

• The project should be of the type that would typically require 6 months of full-time engineering effort or 1 year of part-time engineering effort by an entry level engineer.

• The project should not involve any information or data considered by the industry partner to be confidential or proprietary. The purpose and goals of the project must not require the performance of any fundamental research and there should be no expectation that any fundamental research leading to the production of any intellectual property with any ownership rights will be produced or granted to any party. The project should instead be viewed as being one that creates an educational opportunity for students to develop a new design idea into a prototype using off the shelf existing hardware. Projects will be worked on by teams operating in an open and public training and lab environment where ideas and concepts are exchanged freely among groups composed of a variety of diverse individuals.

Industry Partner Sponsor Commitments & Obligations

• The industry partner sponsor must commit to providing the services of its own engineering personnel to interact with their project team as a mentor on, ideally, an every-other-week basis throughout the course term, but at a minimum of at least the 2nd week of the term, the mid-term review and the end-of-term final project review.

• Submission of a Project Application containing: The title of the project, the name of the industry partner sponsor of the project, the name of the industry partner sponsor’s engineer representative who will act as the partner mentor, a description of the goals for the project, a description of any hardware, software, data or information the sponsor will provide to the project team, a commitment to pay the $7500 project sponsor fee.

• Commitment to pay the industry partner sponsorship fee of $7500 by the end of the course term. (Options to pay in installments during the term of the course are available upon request)

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