Course Syllabus for the Peking University

Curriculum category: institution-wide, open to all

<table>
<thead>
<tr>
<th>Faculty/Department</th>
<th>Course Code</th>
<th>Course Title (Chinese)</th>
<th>Course Title (English)</th>
<th>Course Credit</th>
<th>Course schedule</th>
<th>Course Prerequisite</th>
<th>First School Year</th>
<th>Summer course will be opened to non Peking U students</th>
<th>Audience</th>
<th>Course structure (This part must be filled in for the new course)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>04832850</td>
<td>创新工程实践</td>
<td>Innovative Product Engineering Process</td>
<td>3</td>
<td>3 hours weekly</td>
<td>Nil</td>
<td>14-15</td>
<td>All Peking University students</td>
<td>If it is in category E, please specify if it is related to “Art and Aesthetics” field:</td>
<td></td>
</tr>
</tbody>
</table>

A brief review of the course (this part must be filled in for general course):

“Innovation” has long been a focus of our country in different aspects, including but not limited to national policy. This course is introduced to enhance students’ innovation and enthusiasm in Product Development and Innovation and it is also a course developed from my experience in participating in International Contest of Innovation and reviewing the syllabus of 2.009 Product Engineering Process offered by MIT. This course was first conducted by 7 sophisticated instructors from numerous faculties, including Engineering, Education and Management faculties, since 2013 Spring semester and well responses were received throughout these years not only because of its openness to all Peking U students, but also the theoretical and practical approaches introduced in the course. Students would also undergo an incentive training and practice in brainstorming, designing, researching, ideas presenting and sales managing in order to enhance and modify the quality of their prototypes. They would be divided into 6 groups to produce and display their final products in the “Peking University Innovation Contest” upon the completion of the course. Particularly, three of the students’ prototypes were receiving awards:

1. “Portable printer scanner” was awarded the Gold Prize for the best design awards in the 2nd Global Youth Innovation Leadership Summit and the championship for the latest summit respectively.
2. “Simple Vogue” was awarded the championship in the 3rd Cup of Chenguang of Youth Innovation and Entrepreneurship Competition. The team was also awarded RMB 100,000 for setting up the business and developing the product with the aid of Changping District Government.
3. “TwiDoor – cyber doorplate” was awarded the first runner up in the final contest of International Contest of Applications in Network of Things, iCAN.

According to the above mentioned, the course is definitely beneficial to nurture a group of students who have the potential in Innovative Product Engineering and stimulate the development of technology.

This course was also offered in 2014 Spring semester. It has been opened for enrolment annually since then.
Course Description (This part must be filled in):

Innovative Product Engineering Process is a course designed for providing a platform for both teachers and students from different expertise to engage in innovative learning. Students are expected to apply innovative technology and demonstrate their understanding in both research and implication of service industry. During the lectures, students will undergo intensive training and practice which helps developing and strengthening their interpersonal skill, management skill and production skill.

Teachers from different departments, which include EECS, Engineering, Management, Education departments, will participate in the course teaching. Students from different faculties are expected to form into different learning groups to actively engage in in-class discussion, presentation and developing a prototype. This course aims at providing a diversified learning environment to students in order to enable them to achieve our goal of innovative technology learning.

The 3-year plan of course development (This part must be filled in for the general course):

We planned to offer the course in Spring semester yearly. Year-by-year, we would introduce more up-to-dates course materials to raise the attractiveness of the course in this coming 10 years. For the detailed teaching outline, please refer to the below section.

Course Outline

The Primary Objectives

The course aims at introducing the interrelationship of innovation and practice management, by undergoing a series of training and observation in entrepreneurshipships. Students, who are from different faculties, will be formed into groups and they are required to attend classes conducted by teachers from different expertise. These student groups will be expected to learn the process of designing and producing their own prototypes which will be involved the research and implication of Innovative Technology in service industry. The highlights of the course are listed below:

1. Provide insightful inspirations to students to initiate their own innovative ideas.
2. Provide co-supervision from both faculty members and private entrepreneurship sectors so students can develop a thorough understanding of innovative products.
3. Provide financial support to each of the teams so as to raise their team spirit.
4. Provide a platform for students to develop their innovative ideas into a real production of prototype.

Course Introduction and Course Credit (word limit: 2000)

The course is designed for enhancing several skills and developing various techniques of students:

1. Creativity and Innovation: Provide insightful inspirations to students to search for their own innovative ideas.
2. Cognition and Innovation: Provide co-supervision from both faculty members and private entrepreneurship sectors so students can develop a thorough understanding of innovative technology products.
3. Processing and Innovation: Provide financial support to each of the student groups so as to raise their team spirit and help with their production.
4. Technology and Innovation: Provide a platform for students to develop their innovative ideas into a real production of prototype. Their finishing products will be displayed in the “Peking University Innovation Competition” at the end of the course and the outstanding teams will be referred to participate in the other international contests, for instance the Global Youth Innovation Leadership Summit and International Contest of Applications in Network of Things, iCAN.

The course arrangement is as followed:

1. Introduction of Innovation Product Engineering Process (1 week)
   Description: Introduction of the course arrangement, feature and content.
   Objective: To provide a background introduction to students and raise their interests and willingness to participate in the course.
2. Introduction of different aspects and skills in Innovation Product Engineering Process (3 weeks)
   Description: Teachers from different expertise will introduce fundamental skills, like engineering, managing, leadership skills etc.
   Objective: To broaden students’ horizons.

3. Developing the Ideas (focus, 2 weeks)
   Description: Students need to present their preliminary ideas in class.
   Objective: To enable students to take the role to be developers who are actively participate in innovation and question about how to be innovative.

4. Forming a team (focus, 2 weeks)
   Description: Students need to present their updates and modification of the products. Students are also expected to form into different teams and seek for supervision from their faculty supervisors and private entrepreneurs.
   Objective: To develop team spirits amongst students.

5. Training for team cooperation (6 weeks)
   Description: Students are expected to work in a group to develop and produce a prototype under the supervision of teachers.
   Objective: To enhance the team spirits of students.

6. Interaction with Faculty members and Entrepreneurs (2 weeks)
   Description: Teachers from private sector will make an introduction of products which are developed under Innovation Product Engineering.
   Objective: To enable students to understand the role of product development and strategic marketing.

7. The end of the course: Peking University Innovation Competition (iCAN.PKU) (Fall semester)
   Description: Different teams will have to showcase their final products on stage.
   Objective: To encourage students to actively participate in Innovation Product Engineering Process. To provide an opportunity for both students, teachers and private sectors to exchange ideas and cooperate with each other.

Teaching Approaches (Please list the approaches, eg.: lectures, text readings, discussions, presentations, etc., and write down the proportion of each approach):

In general, the course will be conducted in various ways, including lectures, presentations, discussions, experiments in producing prototypes. It is a 3 credit-bearing course and will last for 3 hours weekly. The course will provide a “Innovation Process Base” for students to develop and produce their products. At the end of the course, students will display their final products and the outstanding teams will participate in the Global Youth Innovation Leadership Summit and International Contest of Applications in Network of Things, iCAN.

Assessment methods (Please specify the proportion):

Attendance: 30%         Team assessment: 20%            Prototype developing and displaying: 50%