SEEM3450 ENGINEERING INNOVATION AND ENTREPRENEURSHIP

No. of Credits: 3
Time: Tuesday, Wednesday & Thursday 14:30 – 17:15
Location: WMY 304

Instructor: Prof. Abdullah KONAK
Information Sciences and Technology, The Pennsylvania State University Berks
Email: konak@psu.edu

Teaching Assistant: Ms. Ka Wing Karen NG
Email: SEEM3450@cuhk.edu.hk

COURSE DESCRIPTION

Remarks
Not for CUHK students who have taken ESTR3502.

LEARNING OUTCOME(S)
The course provides students with a basic understanding of technology and high-growth entrepreneurship. The focus is on the technology innovation coupled with business planning and development with a special emphasis on evaluating future markets shaped by new technologies. This course combines mentor-guided team projects, case studies, and research on the entrepreneurial process.

After completing this course, students should be able to:
1. Understand the influences of technological, environmental, social and cultural considerations on design decisions and new product/service development;
2. Be competent to generate new product/service ideas and to critique the business viability of such ideas;
3. Develop a proposal for a new venture;
4. Analyze and debate the basic issues, risks, challenges, and rewards related to innovation and new ventures.

REQUIRED TEXTBOOK

READING(S)/REFERENCE(S)
Supplemental lecture notes and reading materials will be available in our Blackboard course. Lecture notes will be posted in Blackboard before the daily course session. Students are encouraged to download lecture notes before the class session to take notes.
**GRADING WEIGHTS**

The course provides students with a variety of group and individual assessment opportunities to evaluate their learning. The final course grade is calculated based on the following weights:

- Exam I-Midterm 25%
- Exam II-Final 25%
- Assignments 15%
- Class Activities 5%
- Term Project 30%

The breakdown of the term project evaluation (30%) weights is as follows:

- Draft Report- 10%
- Final Report- 50%
- Final Presentation- 20%
- Peer Evaluation I - 10%
- Peer Evaluation II - 10%

**GRADE DESCRIPTOR**

A: EXCELLENT – exceptionally good performance and far exceeding expectation in all or most of the course learning outcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and apply extensive knowledge, and skillful use of concepts and materials to derive proper solutions.

B: GOOD – good performance in all course learning outcomes and exceeding expectation in some of them; demonstration of good understanding of the subject matter and the ability to use proper concepts and materials to solve most of the problems encountered.

C: FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.

D: MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and the ability to solve simple problems.

F: FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious deficiencies and the need to retake the course.

**ASSIGNMENT SUBMISSION & FEEDBACK**

The course is designed in an active learning format. Students are expected to take an active role in-class activities and discussions. Therefore, students need to complete the reading assignments on a timely basis before the class. The course also includes significant critical thinking and problem-solving components. Students are encouraged to participate in class discussions, voice their ideas, and provide constructive feedback on other students' ideas without hesitation. Please pay attention to your grammar, spelling, content, and organization in the assignment submissions since they are important aspects of assignments.

**Posting of Grades and Assessment:**

The instructors maintain all course grades in Blackboard up-to-date at all times. Please check your grades in Blackboard and inform the instructors in the case of inconsistency as soon as possible.

**Exams and Makeup Day:**

Two multiple-choice exams (Exam I, on Wednesday, July 12, and Exam II, on Wednesday, July 26) will be administered to assess students' understanding and application of the course learning outcomes. Students are responsible for all textbook materials covered and concepts discussed in the class for the exams. A makeup exam may be given on Friday, July 28 (makeup date) if a student has a legitimate reason (university-approved activity, death in the family, sickness with a doctor's excuse, etc.) for the absence.

*Makeup exams can be arranged if a student has a medical condition(s) or with other compelling reasons which prevent the student from attending the exam. The student should contact the teacher and the OAL in writing with documentary evidence before the examination. Unless due to emergencies, requests submitted after the exams will not be considered. Any student absent from an exam without permission from the OAL shall be given a grade of “F” for that test.*
Class Activities:
You will work either individually or mostly in teams to complete class activities. There will be at least one class activity in each class session, and you will reflect on the activity during the class. Note that class activities count for 5% of your final grade. Students who have to miss a class session should complete the class activities by the end of the same class day to get credit. Class activities only after the add-drop period will be graded.

Assignments:
Teamwork is an essential part of the learning experience in SEEM3450. Therefore, there will be several short collaborative or individual assignments (indicated in our agenda below). You are encouraged to discuss assignments with your peers and the instructors. Some assignments will be completed during class time as teamwork. For the team assignments, only one submission per team is enough. For individual assignments, every student in the class has to submit their own assignment.

Assignments will be submitted electronically through the Blackboard system. Unless otherwise said, the drop boxes for the homework assignments will be closed at 14:00 (GMT +8). The submitted work will be graded, and students will receive feedback within 48 hours. The instructors will provide project feedback during class time and electronically use Blackboard. Late coursework submissions should not be accepted under normal circumstances. If a student had a medical condition(s) or other compelling reasons that prevented the student from completing the coursework, the student should contact the teacher and the OAL in writing with documentary evidence before the submission deadline. Under such circumstances, a new submission deadline should be arranged, and no penalty shall be imposed. The new submission deadline should be earlier than the feedback day for that assignment set on the course outline/syllabus, which is 48 hours after the assignment’s due date. A 10% point reduction (per late day) will be imposed on late assignment submissions unless the student has a medical condition(s) or other compelling reasons approved by the OAL. Such penalty should be dealt with separately from the academic quality of work. Late assignments will not be accepted 48 hours after the assignment's due date.

Team Project:
Students are expected to complete a term project that integrates all concepts in the course. Please refer to Blackboard for the detailed project descriptions and grading rubrics for each project step. The term project will be completed as a team, and the instructors will randomly form teams. Teams will be given several opportunities to work during class time and discuss the details with the instructors. During the project work, a written draft report will be submitted. At the end of the project, a written team report will be submitted, and a presentation will be given to the class. The draft report, final report, and presentation must be completed by the specified due date.

Peer Evaluation:
The team project assessment also includes a peer evaluation to assess each student's contribution to the project. Students are expected to complete two “confidential” peer evaluations, one after the draft report and the other after the final report submission.

Attendance and Participation:
Please try to be on time. Coming late or leaving early will be disruptive. Students are encouraged to attend all scheduled class meetings. Attending the classes will be to your benefit, and you will be held responsible for announcements and material discussed during the lectures. Class participation will be evaluated based on comments, attendance, classroom etiquette, overall class contribution, and completion of in-class exercises. Students should report all leaves and absences to the instructor, including sick leaves and absences from class. In case of illness/injury necessitating absence, a medical certificate is required as documentary evidence. You must check your e-mail and Blackboard daily. The course instructors will also email students about the class progress, reading assignments, and schedule. Please do not hesitate to contact the course instructors via email for any course-related questions. The course instructors answer student questions within 24-hours.

Professional attitude and behaviors are expected in class and during all activities related to the class. Verbal and written communications between students and instructors will be conducted by observing the highest standard of respect, civility, and professionalism. The use of inappropriate verbal or written language may constitute a violation of our code of conduct. Students are refrained from using cell phones in class.
**Departmental Guideline for Plagiarism:**
All relevant written work (with the exception of closed-book examinations and tests) from students should be submitted through the University’s proprietary plagiarism detection tool, **VeriGuide**, and any possible cases flagged should be attended appropriately. Any written work submitted without the VeriGuide confirmation and the signed declaration of honesty should not be graded.

If a student is found plagiarizing, his/her case will be reported to the Department Examination Panel, and then to the Faculty-Student Disciplinary Committee (FDC). If the case is proven after deliberation, the student will likely fail the course in which he/she committed plagiarism. The definition of plagiarism includes copying of the whole or parts of written assignments, programming exercises, reports, quiz papers, and final examinations. The penalty will apply to both the one who copies the work and the one whose work is being copied unless the latter can prove his/her work has been copied unwittingly. Furthermore, including others’ works or results without citation in assignments and reports is also regarded as plagiarism with a similar penalty to the offender. A student caught plagiarizing during tests or examinations will be reported to the Department and to the Faculty Student Disciplinary Committee and appropriate disciplinary authorities for further action, in addition to failing the course.

**CLASS SCHEDULE**

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<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Readings/Assignment</th>
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<tbody>
<tr>
<td>1</td>
<td>Wed, June 28</td>
<td>Introduction&lt;br&gt;Entrepreneur &amp; Entrepreneurship Opportunity Identification</td>
<td>Reading: Characteristics of Entrepreneurs</td>
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<td>2</td>
<td>Thu, June 29</td>
<td>Trends in Technology&lt;br&gt;Opportunity Evaluation&lt;br&gt;Technology Forecasting</td>
<td>Assignment 1 (Individual) - Opportunity Identification/Evaluation&lt;br&gt;Due: 29 June, 14:00</td>
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<td>2</td>
<td>Tue, July 4</td>
<td>Business Model&lt;br&gt;Business Model Canvas (BMC) Forming Teams</td>
<td>Reading: Osterwalder &amp; Pigneur (O&amp;P), pp. 14-51</td>
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<td>4</td>
<td>Wed, July 5</td>
<td>Creating a Strong Value Proposition&lt;br&gt;Value Proposition Canvas (VPC) Challenge&lt;br&gt;Team Project Assignments</td>
<td>Reading: O&amp;P, pp. 56-118</td>
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<td>5</td>
<td>Thu, July 6</td>
<td>Creative Problem Solving for Innovation Teams</td>
<td>Reading: Lecture Notes, O&amp;P, pp. 126-194&lt;br&gt;Team Contract (Team)&lt;br&gt;Due: 6 July, 14:00</td>
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<td>6</td>
<td>Tue, July 11</td>
<td>VPC Challenge Presentations&lt;br&gt;Competitive &amp; Cooperative Strategies</td>
<td>Assignment 2 (Team)- VPC Challenge&lt;br&gt;Due: 7 July, 14:00&lt;br&gt;Reading: O&amp;P, pp. 200-239</td>
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<td>7</td>
<td>Wed, July 12</td>
<td>Exam I Introduction to Intellectual Property</td>
<td>Reading: Lecture Notes</td>
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<td>8</td>
<td>Thu, July 13</td>
<td>Trademarks, Copyrights, Patents, and Licensing</td>
<td>Reading: Lecture Notes</td>
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<td>9</td>
<td>Tue, July 18</td>
<td>Marketing Plan/Strategy for Technology-Based Firms</td>
<td>Reading: Lecture Notes &amp; Supplemental Reading&lt;br&gt;Assignment 3 (Team) - Patent Search&lt;br&gt;Due: 14 July, 14:00</td>
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<td>10</td>
<td>Wed, July 19</td>
<td>Product Design and Development Process, Design Thinking</td>
<td>Reading: Lecture Notes &amp; Supplemental Reading&lt;br&gt;Draft Project Report (Team)&lt;br&gt;Due: 19 July, 14:00</td>
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<td>11</td>
<td>Thu, July 20</td>
<td>Innovation in Product Design and Development Project Studio and Consultation</td>
<td>Reading: Lecture Notes &amp; Supplemental Reading&lt;br&gt;Peer Evaluation I (Individual)&lt;br&gt;Due: 20 July, 14:00</td>
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<td>Date</td>
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<td>Reading/Assignment</td>
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| Tue, July 25 | Cultural, Social, Environmental Issues in Product/Service Design, Financing a New Venture | Reading: Lecture Notes & Supplemental Reading  
**Assignment 4 (Individual)** - Social Trends, Culture & Technology Impact on Entrepreneurship  
**Due**: 21 July, 14:00 |
| Wed, July 26 | Risk and Reward Analysis for a New Venture  
Exam II | Reading: Lecture Notes |
| Thu, July 27 | Project Studio and Consultation  
Project presentations  
Business Model Innovation Recap | **Final Project Presentation** (Team)  
**Due**: 27 July, 14:00, in class  
**Final Project Report** (Team)  
**Due**: 28 July, 14:00  
**Peer Evaluation II** (Individual)  
**Due**: 28 July, 14:00 |

**ACADEMIC POLICIES**

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at [http://www.cuhk.edu.hk/policy/academichonesty/](http://www.cuhk.edu.hk/policy/academichonesty/).

With each assignment, students will be required to submit a signed declaration that they are aware of these policies, regulations, guidelines and procedures.

- In the case of group projects, all students of the same group should be asked to sign the declaration, each of whom is responsible and liable to disciplinary actions should there be any plagiarized contents in the group project, irrespective of whether he/she has signed the declaration and whether he/she has contributed directly or indirectly to the plagiarized contents.
- For assignments in the form of a computer-generated document that is principally text-based and submitted via VeriGuide, the statement, in the form of a receipt, will be issued by the system upon students' uploading of the soft copy of the assignment. A user manual of VeriGuide can be found at: [https://academic.veriguide.org/academic/documents/VeriGuide_Academic_Student_User_Manual_CUHK.pdf](https://academic.veriguide.org/academic/documents/VeriGuide_Academic_Student_User_Manual_CUHK.pdf).

**Assignments without the properly signed declaration will not be graded by teachers.**

**Only the final version of the assignment should be submitted via VeriGuide.**

The submission of a piece of work, or a part of a piece of work, for more than one purpose (e.g., to satisfy the requirements in two different courses) without declaration shall be regarded as having committed undeclared multiple submissions. It is common and acceptable to reuse a turn of phrase or a sentence or two from one's own work; but wholesale reuse is problematic. In any case, agreement from the course teacher(s) concerned should be obtained prior to the submission of the piece of work.