Course Syllabus SCI 101G

Technology and Innovation

Contact Details for Professor

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Course Description

Successful entrepreneurship depends on the two poles of operational domain and systematic attention to innovation. This course addresses both, concentrating on technology specifically and innovation more generally. A wide range of technological areas is represented in terms of their distinguishing features and common characteristics, and consideration is given to ways in which they have developed and are developing. Guidance is given in the practicalities of an entrepreneurial approach to business and the likelihood of innovation’s success or failure. The course pre-supposes an interest in the world around you.

Course Prerequisites (if any)

None

Learning Objectives

After this course, you should be able to:

Knowledge
- To acquire knowledge about a wide range of apparently different technological areas.
• To acquire an understanding of innovation and the means of its implementation.
• To gain critical acquaintance with trans-discipline concepts and techniques.
• To acquire an understanding of the unified nature of science and technology.

Skills
• To increase the capacity for understanding texts on technological matters.
• To be able to practice innovative techniques.
• To be capable of drafting autonomously two 2,000 word papers on aspects of the integration of technological and innovative principles.

Attitudes
• To acquire a passion for life-long learning, commitment to one’s work and the ability to be open and critical towards one’s own and others’ perspectives.
• To be confident in approaching as-yet unmet technological problems.
• To relate to innovation as a requisite activity in business and industry.

Course schedule

Week 1
  Session 1: Introduction, invention and innovation
  Session 2: Intelligence, sapience and creativity

Week 2
  Session 1: Symbolic representation and models
  Session 2: Sources of opportunity (I)

Week 3
  Session 1: Materials
  Session 2: Sources of opportunity (II)

Week 4
  Session 1: Chemical technology
  Session 2: Sources of opportunity (III)
  Assignment 1

Week 5
  Session 1: Microelectronics
  Session 2: Nanotechnology

Week 6
  Session 1: Transport technologies
  Session 2: Innovation case study: US automobile manufacture

Week 7
  Mid-term exam

Week 8
  Session 1: Wave engineering
  Session 2: Innovation: principles
Week 9
  Session 1: Nuclear fission
  Session 2: Nuclear fusion

Week 10
  Session 1: Biotechnology
  Session 2: Genome research
  Assignment 2

Week 11
  Session 1: Agricultural technology
  Session 2: Innovation: practice

Week 12
  Session 1: Robotics
  Session 2: 3D printing

Week 13
  Session 1: The internet and wearable computing
  Session 2: Innovative strategy

Week 14
  Session 1: Light and optical technology
  Session 2: Innovation: niches and changing values

Week 15
  Final exam

Course Materials

Textbook:
  - Innovation and Entrepreneurship, by P. F. Drucker, 2011 edition, Routledge,

Case Studies and Additional Readings:
  - References and further materials will be provided during the course

Course Assessment
The students will be evaluated on the basis of their performance as follows:
  - In-class participation: 10%
  - Quizzes: 5%
  - Assignment 1: 15%
  - Midterm exam: 25%
  - Assignment 2: 15%
  - Final examination: 30%

  TOTAL: 100%
Grading Scale of Vesalius College

Vesalius College grading policy, in line with the Flemish Educational norms, is now as stated follows:

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<th>Scale of 20</th>
<th>Scale of 100</th>
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<td>85-100</td>
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Further description of assessment activities and Grading Criteria

The following criteria will be applied in assessing your written work:
Originality
Completeness
Referencing
Presentation
Respect for the both primary and secondary readers

Additional Course Policies

Students are expected to arrive on time for classes, which will begin promptly at the advertised times. Arrival late to classes will risk deterioration of in-class participation grading percentages. A quick quiz will occupy the first 5 minutes of every week’s second session. Assignments which are submitted late will not be graded.

Academic Honesty Statement

Academic dishonesty is NOT tolerated in this course.

Academic honesty is not only an ethical issue but also the foundation of scholarship. Cheating and plagiarism are therefore serious breaches of academic integrity.
Following the College policy, cheating and plagiarism cases will be communicated in writing to the Associate Dean for Students and submitted to the Student Conduct Committee for disciplinary action.

If you refer to someone else’s work, appropriate references and citations must be provided. Grammar, spelling and punctuation count, so use the tools necessary to correct before handing in assignments.