Instructor:
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Teaching Assistant:
TBA

Learning Outcomes

By participating in the course and working on the teams and individual assignments the students are expected to achieve or improve the following skills and competencies:

1. Integrate the knowledge acquired from previous academic courses and apply it to the real life project of developing a new food product.

2. Improve the skills of searching diversified sources including books, review publications, scientific journals, and Internet to select relevant and reliable information for the project.

3. Gain necessary in professional life basic knowledge at the level expected of Food Science major of
outside of the curriculum subjects including business planning, marketing, project management, and cost evaluation.

4. Develop a real new food product prototype and prepare a scientifically comprehensive description of this prototype.

5. Demonstrate in practice constructive participation in team projects and cooperation with a real company.

6. Prepare a team proposal for a company for scale-up processing, and market launching of a selected new product category.

Course Format:

The structure of this course is different from most of the other courses you have taken. Rather than a lecture course, it is a capstone course that is set up as a guided independent project in which you are expected to demonstrate the ability to integrate and apply the knowledge that you have acquired from previously taken academic courses. Initially you will be divided into teams, which will provide a framework in which you will do your independent product development project. The teams will determine general criteria, with which you will develop your product, allow the division of some general tasks, provide forum for developing ideas and testing them, and help to show how an individual project is integrated into the team’s objectives. The teams will introduce their activities to the class in a series of two presentations and written reports (Business Plan and Scale-up).

Within the team framework, you will do a guided independent product development project. To assure a systematic effort, a structured schedule of e-mail reports will be required to provide information on the progress of the individual project. An individual oral presentation and a written report on the prototype as well as substantial contribution to both of the team’s reports are expected. Each class member will be required to prepare a term paper (with slides) on an assigned topic related to the new trends in food industry.

Guidance:

Group and individual guidance are a very important part of this course. It will be provided mainly in the form of class distribution and interpretation of detailed instructions. Various aspects of food product development stages will be discussed in class in a setting similar to industrial management meeting. Continuous interaction between students, the instructor, and the teaching assistant are also a significant part of the course. Students are expected to participate in class discussions and individual conferences. Questions that are general in the nature will be addressed in class. Specific inquires related to individual projects will be subject to student/instructor and/or teaching assistant meetings. Another important
form of continuous students’ interaction is the Internet. The most up-to-date class information will be provided to students by e-mail. Also, accessing the TA and instructor for individual questions via e-mail is strongly encouraged.

**Class Meetings:**

Tuesdays & Thursdays 3:55 – 5:15 PM, Room 109, Food Science Building.

Meetings will cover scientific principles of food product development with emphasis on interdisciplinary character of this field. The integration of physical, chemical, and biological sciences including engineering and technology, as well as management, marketing, and social sciences will be discussed. Attendance is required.

**Team and Individual Activities:**

Tuesdays & Thursdays 5:35 – 6:55 PM, any arranged room or laboratory in Food Science Building or library.

Teams meetings will include discussions on assigned projects and related matters. Detailed plans will be developed by the teams. Work on individual assignments related to a selected product will include information search and consultations. Detailed plans will be developed by individual students.

For the preparation of prototypes, students and/or teams are responsible for making contacts with cooperating companies. Students and/or teams are responsible for making contacts to acquire necessary ingredients, and to request the equipment and work space needed to produce the prototype for presentation to the class. These arrangements must be done well in advance and coordinated by TA.

**Grade Breakdown:**

Active participation in and contribution to the team’s business plan development, presentation, and report 25%

Individual prototype development, presentation, and report 25%

Active participation in and contribution to the team’s scale-up plan development, presentation, and report 25%

Term paper 25%

Passing grades must be achieved in all four parts listed above to pass the course.

Logs with a record of tasks performed by the teams are required
Logs with a record of tasks performed by the individual students are required

**Course Timeline:**

Class 01: Course objectives, format, requirements, and grading. Student information forms filled out by class members

Class 02: Guidelines for information search, development, oral presentation, and written report on business plan and preliminary market research

Class 03: Reasons for innovation in food industry

Class 04: Consumer and market trends

Class 05: Visit to CAFT-FMT

Class 06: Preliminary market analysis

Class 07: Food quality and health aspects in product development

Class 08: Small versus large food processors, Small Business Administration

Class 09: Business Plan and Preliminary Market Analysis Teams’ Presentations

Class 10: How to create a new product idea? How to transfer new ideas into specific definitions?

Class 11: Laboratory safety and environmental programs. Human subject research.

Class 12: Screening of new ideas


Class 14: Guidelines for detailed study of market, product, and process

Class 15: Sensory analysis. Guidelines for oral presentation of prototype

Class 16: Appearance and color of foods

Class 17: Functional properties of ingredients

Class 18: Food package development

Class 19: Legal aspects of new products, health claims, and nutraceuticals

Class 20: Preliminary processing evaluation

Class 21: Prototype presentations by class members
Class 22: Guidelines for Scale-up teams’ presentation
Class 23: Process development
Class 24: Principles of project planning and management and cost analysis
Class 25: Total Quality Assurance, bio-security, water management
Class 26: Launching new product, distribution, promotion, Internet marketing
Class 27: Scale-up teams’ presentations
Class 28: Summary of the course