

FNH 490 004 – Food Science Applications to Address Nutrient Deficiencies in Developing Countries

Co-ordinators: Beatriz Ramos & Chelsea Leung

Faculty sponsors: Dr. Eunice Li-Chan & Dr. Judy McLean

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Time and location: Mondays & Wednesdays 12-1:30pm

Room 1210 in Civil and Mechanical Engineering building (CEME)

Module I. Background information (6 classes)

- 1) Overview of most prevalent nutrient deficiencies in developing countries
- 2) Introduction to food fortification, supplementation and additives
- 3) Importance of social, religious and cultural dimensions when addressing nutrient deficiencies in developing countries.
- 4) Overview of global regulations concerning food fortification and additives.

Module II. In-depth analysis of current strategies addressing nutrient deficiencies (7 classes)

- 1) Current global strategies and organizations addressing nutrient deficiencies
- 2) Home fortification
- 3) Ready to use therapeutic foods, home fortification products and lipid based supplements used in developing countries.
- 4) Sustainable approaches
- 5) Water and sanitation: purification strategies and implications on malnutrition.

Module III. Development of proposals (12 classes)

- 1) Cultural background and nutritional needs of regions of interest (Mexico, Rwanda).
- 2) Individual project proposal.
- 3) Available class time for group work.
- 4) Final presentations.

Grading Scheme

| | | |
|-----------|----------|---|
| 15 | % | Participation and attendance |
| 2 | % | Module I: Individual Presentation |
| 5 | % | Module I: Case Study Group Presentation (20 minutes per pair of students) |
| 5 | % | Module I: Quiz |
| 15 | % | Module II: Presentation (30 minutes per pair of students) |
| 10 | % | Module III: Individual proposal (15 minutes) |
| 13 | % | Module III: Final presentations |
| <u>35</u> | <u>%</u> | <u>Module III: Final written proposals</u> |
| 100% | | TOTAL |

Module I. Background Information: Outline

Learning outcomes

By the end of this module, students should be able to do the following:

- name the most prevalent micronutrient deficiencies in developing countries
- discuss current strategies used by global organizations to address nutrient deficiencies
- give examples of food fortification and supplementation
- discuss the importance of social, religious, and cultural context with respect to global aid
- discuss global regulations related to food fortification

Schedule

Class #1: Introduction to the course (Bee and Chelsea)

Chapter #1: Micronutrient Malnutrition Intro - covered (pp. 3-19)

Reading for next class Chapter #2 Food Fortification- Basic Principles.

Homework for next class: What fortified foods (2) do you eat on a regular basis? Do you know how these are fortified?

Class #2: Introduction to fortification

Discussion about fortified foods we consume on a regular basis.

Discussion about Chapter #2.

Fortification of Maize (Bee discuss and provide a handout)

Other examples of Food Fortification, supplementation or additives

Readings Chapter #3 and Chapter #5 --> Select 1 nutrient (health significance and fortificant information).

Class #4: Discuss specific nutrient info - 1 per person.

Macro nutrient issues in the world discussion (handout provided during class)

Importance of cultural dimensions when addressing nutrient deficiencies (discussion)

Homework- readings (Ch3 and Ch4). Provide an example/reading.

Class #5: Discussion: importance of cultural dimensions when addressing nutrient deficiencies

Global regulations concerning food fortification and additives

Homework for next class: case study of a product: choose a fortified food or supplement and discuss its pro's and con's, mention global regulations and incorporate the importance of culture.

Class #6: Presentations: 20 minutes presentation plus discussion and Q&A period

Peer Evaluation

Begin Module II: Current Organizations and strategies to address nutrient deficiencies around the world.

Grading Rubrics

1. Individual Presentation (Module I)

| Components | 3-Sophisticated | 2-Competent | 1-Not yet Competent |
|---------------------|---|---|---|
| <i>Organization</i> | Presentation is clear, logical, and organized. Listener can follow line of reasoning. | Presentation is generally clear and well organized. A few minor points may be confusing. | Presentation is difficult to follow and understand. |
| <i>Style</i> | Presentation is a planned conversation, paced for audience understanding. It is not a reading of a paper. Speaker is comfortable in front of the group and can be heard by all. | Pacing is sometimes too fast or too slow. Presenter seems slightly uncomfortable at times, and audience occasionally has trouble hearing him/her. | Presenter seems uncomfortable and can be heard only if listener is very attentive. Much of the information is read. |
| <i>Content</i> | Student summarized effectively the information from the text and provides information from at least one other reliable source. | Student summarized the information from the text. Does not provide any additional sources of information. | Explanations of concepts incomplete. |

Adapted from Huba, M.E., & Freed, J.E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning* (pp. 156-157). Allyn & Bacon: Needham Heights, MA. Retrieved from <http://www.cmu.edu/teaching/design/teach/rubrics.html>

2. Class Participation

| | Excellent | Good | Poor |
|-----------------------------------|--|---|--|
| <i>Attendance</i> | Attends class regularly (5) | Attends class regularly (5) | Does not attend class regularly (2-3) |
| <i>Contribution to discussion</i> | <i>Always contributes</i> to the discussion by raising thoughtful questions, analyzing relevant issues, building on others' ideas, synthesizing across readings and discussions, expanding the class' perspective, and appropriately challenging assumptions and perspectives (14) | <i>Sometimes contributes</i> to the discussion in the aforementioned ways (9) | <i>Rarely contributes</i> to the discussion in the aforementioned ways (7) |
| <i>Provision of readings</i> | Provides interesting readings (at least 2) from a reliable source (6) | Provides 2 readings from unreliable sources or only 1 reading (4) | *Provides no readings (0) |

Retrieved and adapted from <http://www.cmu.edu/teaching/design/teach/rubrics.html>

Student Directed Seminars:

This page has been inserted into the course syllabus (outline) at the request of the advisory committee that oversees the program for Student Directed Seminars.

The program of Student Directed Seminars is intended to provide senior undergraduate students with added opportunities to learn in small, collaborative, group-oriented experiences. It is also the program's goal to ensure participants, as members of a self-directed group, have a high degree of control over their own learning experience. The UBC program is modeled on an established student-directed seminar program at the University of California at Berkeley.

The program works as follows. A student (or group of students) in their third or fourth year of undergraduate study, proposes a course not currently offered at UBC. Proposals go to an Advisory Committee for review and if the proposal looks feasible, the committee encourages further development. The student proceeds to develop a course outline under the guidance of their faculty sponsor (or in some cases, multiple faculty sponsors). Student coordinators also have the benefit of a preparation workshop conducted by the UBC Centre for Teaching and Academic Growth. The Student Directed Seminar Advisory Committee considers course outlines for final approval. If approved, the student-initiated course is advertised to the general student body.

All upper-level students are eligible to participate and applicants are usually subject to a selection process. Normally the minimum enrollment for each class is eight, the maximum fifteen. **Students are only eligible to receive credit for one seminar as a participant and one seminar as a coordinator.**

The Student Coordinator is not an instructor. The coordinator's role is that of a facilitator. S/he is responsible for organizing the learning resources, such as guest lectures, reading materials, and films to be used in the class. The Student Coordinator also sets the parameters of course content, structure, and evaluation procedures in conjunction with a Faculty Sponsor. The participants have an important role in refining the details of all of these elements during the first classes of the term.

The entire class is responsible to one another for ensuring that the learning experience has a quality and richness that benefits everyone. Ultimately the faculty sponsor is responsible for the grades that are submitted for this course.

This course is subject to the normal rules and regulations, as appropriate, which apply to all UBC courses.

More details are available at the following URL: http://learningcommons.ubc.ca/?page_id=792

Please contact Margot Bell, margot.bell@ubc.ca, phone: 604-822-9818 if you have any questions.

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