Banner course title:  
Fiber, Bioactive Food & Health

Full course title:  
Dietary fiber, bioactive food components & health

Catalog description:  
Lecture and discussion of gut physiology, gut microbes, dietary fiber and bioactive food components and their impact on health, including colorectal cancer, inflammatory bowel disease, heart disease, diabetes, and immune function.

Course justification:

1. Why is this course being requested and how does it fit into current curriculum?  
Dietary fiber, bioactive food components & health is proposed as a new elective course for PhD students in Nutrition, MS students in Nutritional Sciences, Food Science, and Animal Sciences, and students from the medical school and campus wide who seek advanced training in the relationship of dietary fiber and phytochemicals to health. The role of dietary fiber and bioactive food components in health is a major focus of current nutrition research. Health professionals and educators, the food and pharmaceutical industries, nutrition policy makers and consumers need scientifically sound information on these topics. Currently, there is no course at UH that addresses dietary fiber and bioactive food components at an advanced level to help train future researchers and professionals in this field. This course will build on the current curricula of HNFAS graduate programs, and addresses the critical need for additional graduate courses in nutrition to meet the course requirements of our new inter-college PhD program in Nutrition (HNFAS, JABSOM and the Cancer Research Center of Hawaii). If this course is not approved, our PhD students will be limited in the availability of graduate level courses in nutrition to solidify their training, and the program will suffer in potential to attract high-quality applicants to the program. FSHN 784 will complement the current required graduate course offerings in HNFAS and other proposed new elective courses as shown below.

Required core nutrition courses for all graduate students:
FSHN 601: Science of Food Systems (2)  
FSHN 631: Nutritional Epidemiology (3)  
FSHN 685: Nutrition and Disease; Cellular and Molecular Aspects (2)  
FSHN 682: Topics in Nutritional Sciences (1)  
FSHN 681: Seminar in Nutritional Sciences (2)

New, proposed, elective nutrition courses (at least two are required for PhD students):
FSHN 784: Dietary fiber, bioactive food components & health (3) (this UHM-1)  
FSHN 785: Diet and Cancer Seminar (1) (UHM-1 form submitted Fall 08)  
FSHN xxx: Obesity (experimental offering to be taught as FSHN 682 (1), Fall 09)
2. What other courses at UHM closely parallel the proposed course and in what way will the latter make a distinct contribution?

No other course at UHM closely parallels this course content and format. FSHN 685 - Nutrition and Disease: Cellular and Molecular Aspects covers the impact of all aspects of nutrition on the molecular basis of chronic disease pathology, and FSHN 631 - Nutritional Epidemiology covers population based diet-disease relationships. Neither course, however, specializes on cutting edge concepts and research literature on fiber and bioactive substances, and their relationship to health. This proposed course will build on the above mentioned core nutrition courses and be a comprehensive, advanced course in this specialty area.

3. How will the content be organized? See attached syllabus.

4. Why is the number of credits and level justified?

The proposed course is worth 3 graduate credits, which will be sufficient effort and contact time (two 75- minute lecture/discussion periods per week) for students to meet the course objectives. The course will address cutting edge concepts and research literature appropriate for graduate-level students that have the prerequisites. Physiology, nutritional biochemistry, and graduate or medical school standing will be sufficient prerequisites for students to be successful meeting course objectives. Most HNFAS students will also have taken FSHN 631 and 685 before they elect this course, but we do not want to make these required prerequisites so that the course remains accessible to a wider student body.

5. How will the course assist students to achieve critical skills?

CTAHR skill categories 1, 2, 3, 4, 5, 8, 9, and 10 will be addressed (see below).

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<tr>
<th>Skill Category</th>
<th>Description</th>
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<tr>
<td>1- Written Communications</td>
<td>Student writing will be evaluated via the Research paper critique (see syllabus for description). Exam format will be short essays in which students must write clearly and succinctly for full credit.</td>
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<tr>
<td>2- Oral Communications</td>
<td>Student oral communication will be evaluated via the Research paper presentations (see syllabus for description) and class discussion.</td>
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<td>3- Analytical/Problem Solving Skills</td>
<td>Students will be required to critically evaluate a current research article published in a peer-review journal (Research paper critique). Full credit will be awarded to students who demonstrate critical thinking skills necessary to point out the strengths and weaknesses of the research.</td>
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<td>4- Personal Characteristics</td>
<td>In-class discussions will evaluate students’ ability to accept and provide constructive criticism.</td>
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<tr>
<td>5- Human Relations Skills</td>
<td>In-class discussions and Research paper presentations will evaluate students’ sensitivity to others, etiquette skills, self-confidence, and professional attitudes.</td>
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<td>6- Business Management Skills</td>
<td>Not addressed</td>
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<tr>
<td>7- Real World Experience</td>
<td>Not addressed</td>
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<tr>
<td>8-Leadership Skills</td>
<td>Students will work in groups to present 1 research paper. Group management, delegating responsibilities, communication, and building group consensus will be necessary to prepare the presentation.</td>
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<tr>
<td>9- Computer Skills</td>
<td>Students will use word processing software and presentation technologies to complete the Research paper critique and the Research paper proposal</td>
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<tr>
<td>10- Global perspective</td>
<td>Students will use global differences in diet to understand digestive disease prevalence</td>
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6. How will the students be evaluated?

Student evaluation will include both written (essay exams, research paper critique) and oral (research paper presentation, discussion participation) assessments. See syllabus for total grade contribution of each aspect.

7. What are the minimum qualifications for teaching this course? Is a qualified instructor available?

Dr. Maria Stewart, an assistant professor in the HNFAS department, is qualified to teach FSHN 784 based on her research expertise and publications in dietary fiber and gut microbes. Should Dr. Stewart become unavailable, a faculty member or team of members with expertise in gut physiology, dietary fiber, and/or gut microbes would be qualified to teach this course (e.g. Dr. Michael Dunn w/ Dr. Yong Li).

8. How will the course be financed?

This course does not require funding beyond normal operating funds. Dr. Stewart’s appointment is 70% Instructional FTEs, and she can devote the necessary time toward teaching this course.

9. Has the course been offered before, is there a demand for it?

A downsized version of the proposed course (1 credit vs the proposed 3 credits) is currently being offered as FSHN 682- Topics in Nutritional Sciences (1), spring 2009. Eight graduate students are enrolled in this course demonstrating student demand. Initial feed back from the students is positive. As mentioned above in section #1, there is a need for additional elective nutrition courses to fulfill the requirements of our PhD program. Students in the PhD program and applicants to the program are inquiring about potential elective courses.

10. Is the course cross-listed with another department?

FSHN 784 will not be cross-listed as another course.