COURSE REQUEST
8836 - Status: PENDING

Last Updated: Buckworth, Janet
11/05/2013

Term Information

Effective Term
Spring 2015

General Information

Course Bulletin Listing/Subject Area
Human Nutrition

Fiscal Unit/Academic Org
Department of Human Sciences - D1254

College/Academic Group
Education & Human Ecology

Level/Career
Graduate

Course Number/Catalog
8836

Course Title
Advanced Nutritional Genomics

Transcript Abbreviation
Adv Nutr Genom

Course Description
The primary goal of the course is to stimulate critical thinking and discussion among graduate students about current research findings in the areas of genomics, proteomics and metabolomics as they apply to studies in the nutritional sciences.

Semester Credit Hours/Units
Fixed: 3

Offering Information

Length Of Course
14 Week

Flexibly Scheduled Course
Never

Does any section of this course have a distance education component?
No

Grading Basis
Letter Grade

Repeatable
No

Course Components
Lecture

Grade Roster Component
Lecture

Credit Available by Exam
No

Admission Condition Course
No

Off Campus
Never

Campus of Offering
Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites
HN/AS/FST 7761
HN/AS 7762

Exclusions

Cross-Listings

Cross-Listings
Cross listed in Human Nutrition and Animal Sciences

Subject/CIP Code

Subject/CIP Code
19.0504

Subsidy Level
Doctoral Course

Intended Rank
Masters, Doctoral
Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

1. To understand the techniques used in genomics, proteomics and metabolomics
2. To understand the conceptual bases of the "ommics" approaches in biology
3. To critically evaluate the quality of studies in genomics, proteomics, lipidomics

Content Topic List

- Human Genome Project
  - Microarray techniques
  - Genome-wide searches & comparative genetics
  - Gut microbiomics
  - Protein separation & identification
  - Differential protein expression
  - Mass spectrometry-based proteomics
  - Biomarkers
  - Lipidomics

Attachments

- HN 8836 syllabus.pdf: Course syllabus
  (Syllabus. Owner: Miller, Carla K)

Comments

- Please contact Earl Harrison for questions about this course. (by Miller, Carla K on 10/28/2013 03:19 PM)

Workflow Information

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<td>10/28/2013 03:20 PM</td>
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HN/AS8836  Advanced Nutritional Genomics

<table>
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<tr>
<th>Instructors</th>
<th>Earl H. Harrison, PhD</th>
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<tbody>
<tr>
<td></td>
<td>Kichoon Lee, PhD</td>
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<tr>
<td>Office Hours</td>
<td>By appt</td>
</tr>
<tr>
<td>Phone</td>
<td>292-8189 (EH) 688-7963 (KL)</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:Harrison.304@osu.edu">Harrison.304@osu.edu</a> <a href="mailto:Lee.2626@osu.edu">Lee.2626@osu.edu</a></td>
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OBJECTIVES:  The primary goal of the course is to stimulate critical thinking and discussion among graduate students about current research findings in the areas of genomics and proteomics as they apply to studies in the nutritional sciences.

Specific objectives are:

1. To understand the techniques used in genomics, proteomics and lipidomics.
2. To understand the conceptual bases of the “omics” approaches in biology.
3. To critically evaluate the quality and completeness of studies in genomics, proteomics and lipidomics.
4. To understand how these approaches can be applied to problems in the nutritional sciences.

COURSE REFERENCE MATERIALS:  The electronic version of the lecture and reading materials will be posted on the Carmen web page.

Recommended text book: Molecular Cell Biology Lodish 5th edition

Review articles:


FORMAT: The course format will include didactic lectures by the instructors and guest lecturers, guided critiques of the literature, and formal presentations on current literature by the students.

COURSE REQUIREMENTS AND EVALUATION: Students taking the course for credit are required to:

1. Read assigned materials provided for each topic and actively participate in discussions.
2. Submit a written review/evaluation of an assigned published paper for each of the two main topics (genomics, proteomics). The reviews should be about 5-6 pages in length and include a brief synopsis of the findings and significance as well as an explicit indication of the strengths and weaknesses of the study. Students will present a 25 minute talk on a given assigned paper.
3. Make a 15 min oral presentation in class on how you would apply genomics, lipidomics and/or proteomics to your own research or to a research problem of nutritional significance.

GRADING: The course will be graded as follows: Each of the two written assignments will constitute 40% of the final grade and will be given a maximum value of 40 points. The oral presentation will constitute 20% of the final grade and will be given a maximum value of 20 points. Active participation in class discussions and overall effort may result in one step elevation of final grade (e.g., B to B+) at discretion of instructors.

COURSE GRADING SCALE:
The following scale will be used to determine letter grades out of the total 100 possible points:

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ACADEMIC HONOR POLICY
All codes of honor as set forth by the Academic Plan for The Ohio State University and in the Handbook for the Student Code Conduct for the Ohio State University will be upheld. Faculty and students are expected to read and follow this policy as found at:
In particular, plagiarized work will not be tolerated and will result in swift action through the Academic Misconduct Committee of the OSU. Plagiarism is defined as the representation of another’s work or ideas as one’s own and may include unacknowledged word-for-word use and/or paraphrasing of another person’s work and/or the inappropriate unacknowledged use of another person’s ideas. Duplication or submitting the same work to satisfy one course that has been submitted to meet satisfactory requirements for another course will also be considered unethical for the standards of this course.

STUDENTS WITH DISABILITIES:
We welcome the opportunity to discuss privately the specific needs of any student who feels he or she may need an accommodation based on the impact of a disability. Please contact the Office for Disability Services at 614-292-3307, or visit 150 Pomerene Hall, to coordinate reasonable accommodations for students with documented disabilities.

Nutrition in the Post-genomic Era – Tentative Course Schedule for Semester System

Week 1  Overview of the new “omics”
The Human Genome Project (HUGO)

Week 2  Microarray techniques, and data mining and interpretation

Week 3  The OSU Microarray Facility tour

Week 4  Searching GenBank & other NCBI resources
The “candidate gene” approach

Week 5  Genome-wide searches and comparative genomics

Week 6  Gut Microbiomics (Dr. Zhongtang Yu)

Week 7  Literature Critique (genomics)

Week 8  The Human Proteome Project (HUPO)
Protein separation & identification

Week 9  Differential protein expression (ToF MS)

Week 10  Mass spectrometry-based proteomics

Week 11  Mass spectrometry facility tour
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<tr>
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<td>Biomarkers</td>
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<td>Week 13</td>
<td>Lipid MAPS Project</td>
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<td>Week 14</td>
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<td>Week 15</td>
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