

## 國立臺灣師範大學課程綱要

### 一、課程基本資料 (課程委員會通過，任課教師不可異動部分)

課程代碼	HGC0086	課程名稱	分子營養學
英文課名 <b>COURSE TITLE</b>	Molecular Nutrition		
全/半年	半	必/選修	選
總學分數	2	每週授課時數	2
開課班級	人類發展與家庭學系/營養科學與教育組/大學部四年級及碩士班		
先修課程 <b>PREREQUISITES</b>	None		
課程簡介 <b>COURSE DESCRIPTION</b>	<p>This is a co-taught course among University of Maryland at College Park (UM), National Taiwan University (NTU), and National Taiwan Normal University (NTNU) supported by the MOU between UM and NTU, as well as the MOU between UM and NTNU. Faculty and students in these universities will participate in the course via videoconferencing. The emerging discipline of molecular nutrition encompasses nutritional biochemistry, nutritional genomics, nutritional metabolomics, and epigenetics. The course focuses on the effects of diet and nutrients on an individual's genome and metabolism, and how the molecular events affect human health. This course is a lecture course designed to acquaint senior undergraduate and graduate students with current concepts, knowledge and strategies for understanding molecular nutrition.</p> <p>Spring 2012: 21 February to 15 May; Tuesday and Thursday 8:00 AM-9:50 AM.</p> <p><b>INSTRUCTORS</b></p> <p>1. 鄭文興 Wen-Hsing Cheng, Ph.D. Assistant Professor 3107B Skinner bldg. University of Maryland College Park, MD 20742 Phone: 301.405.2950</p>		

E-mail:whcheng@umd.edu

2. 羅翊禎

Yi-Chen Lo, Ph.D.

Assistant Professor

Institute of Food Science and Technology

National Taiwan University

Taipei, 10617, Taiwan

Phone: 886-2-3366-4123

E-mail: loyichen@ntu.edu.tw

3. 蕭寧馨

Ning-Sing Shaw, Ph.D.

Professor

Dept of Biochemical Science and technology

College of Life Science

National Taiwan University

Taipei, 10617, Taiwan

Phone: 886-2-3366-5900

E-mail: nsshaw@ntu.edu.tw

4. 蘇純立

Chun-Li Su, Ph.D.

Professor

Program of Nutritional Science and Education

Department of Human Development and Family Studies

Cin Building, Room 233

National Taiwan Normal University

No. 162, Sec. 1, He-ping East Road

Taipei 10610, Taiwan

Phone: +886-2-7734-1436

Fax: +886-2-2363-9635

E-mail: chunlisu@ntnu.edu.tw

***Academic Integrity:***

Students are encouraged to share intellectual views and discuss freely the principles and applications of the course materials. However, graded assignments must be executed independently. Students are prohibited from cheating on exams, plagiarizing papers, submitting fraudulent

	<p>documents, buying papers, submitting the same paper for credit in two courses without authorization and forging signatures. The University of Maryland, College park has a nationally recognized Code of Academic Integrity, administrated by the Student Honor Council. The Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabricating, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <a href="http://www.shc.umd.edu">http://www.shc.umd.edu</a>.</p> <p>To further exhibit your commitment to academic integrity, remember to sign the Honor Pledge on all examinations and assignments: “I pledge on my honor that I have not given or received any unauthorized assistance on this examination (for the take home exam)”.</p>	
<b>課程目標</b> <b>STUDENT ACHIEVEMENT OBJECTIVES</b>		對應系所核心能力
1	具備營養相關知識 The student will know the areas of molecular nutrition.	1-1
2	具備研究之基礎知識 The student will learn the mechanisms by which nutrients and dietary components regulate gene expression at genomic, transcriptional, and translational levels.	1-3
3	具備營養相關研究能力 - The student will be familiar with the nutritional control on optimal human health. - The student will be aware of the impact of nutrients and dietary components on human genetic diseases.	2-3

## 二、教學大綱 (任課教師可異動部分)

授課教師	(系統自動帶入)
------	----------

教學進度與主題 **LECTURE TOPICS**

1. 2/21 Introduction (knowing each other and course introduction) 鄭羅蕭蘇
2. 2/23 Translational control: selenium 鄭  
2/28 Holiday in Taiwan
3. 3/1 Transcriptional control: biotin and Vit D 鄭
4. 3/6 Signaling transduction in cancer cell death 蘇
5. 3/8 Molecular anticancer mechanisms of natural compounds 蘇
6. 3/13 Group discussion-1 鄭羅蕭蘇
7. 3/15 Fetal programming (Fetal origin hypothesis; Hypertension and metabolic syndrome) 羅  
3/20 and 3/22: Maryland spring break
8. 3/27 Clinical applications of phytochemicals: curcumin 蘇
9. 3/29 Epigenetic-DNA methylation (Folic acid and DNA methylation) 羅  
4/3 and 4/5: NTU and NTNU spring break
10. 4/10 Epigenetic-Histone modification (Histone methylation and acetylation) expression 羅
11. 4/12 Group discussion-2 鄭羅蕭蘇
12. 4/17 Mid-term 鄭羅蕭蘇
13. 4/19 Premature aging syndrome and nutrition 鄭  
4/24 and 4/26: EB 2012 at San Diego, CA, USA
14. 5/1 Translational control-Iron 蕭
15. 5/3 Group discussion-3 鄭羅蕭蘇
16. 5/8 Bile acid signaling and metabolic regulation 蕭
17. 5/10 Group presentation 鄭羅蕭蘇
18. 5/15 Final discussion 鄭羅蕭蘇

教學方法

方式	說明
<input checked="" type="checkbox"/> 講述法	
<input checked="" type="checkbox"/> 討論法	
<input type="checkbox"/> 問題解決教學	
<input type="checkbox"/> 合作學習	
<input type="checkbox"/> 實驗/實作	
<input type="checkbox"/> 實地考察、參訪	

<input type="checkbox"/> 媒體融入教學		
<input type="checkbox"/> 專題研究		
<input type="checkbox"/> 其它		
<b>評量方法 EVALUATION PROCEDURES</b>		
方式	百分比	說明
<input type="checkbox"/> 作業		(可說明評量細節或欲評量之核心能力)
<input checked="" type="checkbox"/> 期中考 <b>MID-TERM</b>	45%	
<input type="checkbox"/> 期末考		
<input checked="" type="checkbox"/> 課堂討論參與 <b>DISCUSSION</b>	10%	There are 3 topics to be discussed on 3/13, 4/12, 5/3 and, 5/15. We will discuss one topic each discussion. Papers pertaining to the discussion will be distributed prior to the discussion. Reading the articles and participating in discussion are mandatory.
<input type="checkbox"/> 出席		
<input checked="" type="checkbox"/> 報告 <b>PRESENTATION (as a team)</b>	15%	<ol style="list-style-type: none"> <li>1. The 2012 class will form 4 teams. On May 10, each team will give a 20-min presentation. A team must be composed of students from all three universities. A Facebook group site is generated for facilitating the international interactions.</li> <li>2. A team must be formed by 4/12, the date of second group discussion (2 points).</li> <li>3. A title and abstract (&lt;250 words) must be submitted by 5/3, the third discussion (3 points).</li> <li>4. Presentation: 10 points Background, methods, results, conclusion.</li> </ol>
<input type="checkbox"/> 成果展覽		
<input type="checkbox"/> 專題		
<input checked="" type="checkbox"/> 其他： 書面報告 <b>TERM PAPER (individual)</b>	30%	<ol style="list-style-type: none"> <li>1. The term paper can be based on the same subject of the presentation. Although the presentation is team-work, the term paper is written individually.</li> <li>2. Due date: May 12, 11:59 PM.</li> </ol>

		<ol style="list-style-type: none"> <li>3. Page limit: 10-12 pages of main text using the numerical style of references (e.g. 1-3, 4), figures included but references excluded.</li> <li>4. Font: use Arial, Helvetica, Palatino Linotype, or Times New Roman, size 11 or larger</li> <li>5. Type density: no more than 15 characters per inch, and no more than six lines per inch</li> <li>6. Margin: one-half inch margins for all pages.</li> <li>7. References: at least 10. At least 8 of them must be original research papers.</li> <li>8. The paper should follow the style of the Nature Review series, containing abstract, main text with subtitles and conclusion remarks. “Boxes” and glossaries are not required. Figures and tables are not required but encouraged. An example to follow: <a href="http://www.nature.com/nrm/journal/v8/n5/pdf/nrm2161.pdf">http://www.nature.com/nrm/journal/v8/n5/pdf/nrm2161.pdf</a></li> <li>9. Direct copy-and-paste from the World Wide Web in any forms is prohibited.</li> <li>10. Based on a 100 point, deduction will be made should the followings occur:       <ul style="list-style-type: none"> <li>- Submitted (by email) after May 12, 11:59 PM (2 points/24 hours).</li> <li>- Page numbers do not meet the guidance (2 points/page).</li> <li>- Font, type density, margin and reference requirements do not meet (2 points/item).</li> <li>- Less than 10 references cited (1 point/ reference)</li> <li>- Wrong citations (2 points/citation)</li> <li>- Typos, grammatical errors and nomenclature (up to 5 points total).</li> <li>- Lack of 1) clarity, 2) in-depth</li> </ul> </li> </ol>
--	--	--

		analysis and up-to-the-minute knowledge, and 3) future directions/perspectives (up to 5 points for each item)
<b>參考書目</b> <b>TEACHING</b> <b>MATERIALS AND</b> <b>SUGGESTED TEXTS</b>	四、參考書目：( 尊重智慧財產權，請同學勿隨意影印教科書) 1. Updated SCI journal papers. 2. Teaching materials will be posted on the Moodle.	