THINGS YOU NEED TO KNOW REGARDING RD STUDY Ver. 3/2015 FOR CUHK FNSC STUDENTS' REFERENCE

Introduction

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This material is for FNSC students who want to pursue further study in master of nutrition and dietetics in order to become a RD. Please be reminded that the information changes annually. Therefore, you are suggested to keep updated with DAA and the Universities. It is always good to find some local agents to help you on applying these programs and you are highly recommanded to apply these programs as soon as you receive your year 4 sem 1 results.

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Content

- 1) Information of accredited programs
- 2) Checklist
- 3) Curriculum details template

General Flow(YEAR 4)



Information of Dietetic studies in Australia



This material is for students who want to pursue further study of Master of Nutrition and Dietetics in Australia. All the programs listed below are currently accredited by Dietitians Association of Australia (DAA) in 2015.

Necessary information is included for your reference. Please note that the program accredition changes annually so please visit DAA website(http://daa.asn.au/) before any application.



- 2x Biochemistry(Code 3000above)
- 2x Physiology(Code 3000above)

ENGLISH REQUIREMENT

Academic IELTS : Overall 7.5 with no band below 6.5

SUPPLEMENTARY DOC.

- 2x Reference Letters
- Extra documents e.g. personal statement and Curriculum details may be required

The second year of the course involves a 20 week professional placement in hospitals, community health and food service areas.

OFFER RELEASE DATE :

1)Around Dec

http://sydney.edu.au/courses/master-of-nutrition-and-dietetics



MASTER OF NUTRITION AND DIETETICS (Code:MANUTDIE1000)

Full Accreditation until 30 November 2017

TUITION FEE : \$AUD\$38,200.00/YR(2015) COURSE START DATE : March DURATION : 2 YEARS APPLICATION Period: ~JAN-170CT APPLICATION FEE : YES CONDITIONAL OFFER : Unknown SCHOLARSHIP : YES

University of Wollongong

Master of Nutrition and Dietetics (Code:1631)

Full Accreditation until 28 February 2017

KNOWN QUOTA FOR INTERNATIONAL STUDENTS : <10

TUITION FEE : \$AUD13,400/Session(2015) COURSE START DATE : 2/03 DURATION : 2 YEARS APPLICATION Period : ~FEB-30SEP APPLICATION FEE : YES CONDITIONAL OFFER : Depends on GPA SCHOLARSHIP : YES

REQUIREMENTS(at least 2 unit/course) 2x Biochemistry(Code 3000above)

2x Physiology(Code 2000above)

4x Nutrition course(Code 1000 above)

ENGLISH REQUIREMENT

Academic IELTS : Overall 6.5 with no band below 6.5

SUPPLEMENTARY DOC.

- 2x Reference Letters
- 1x Supplementary form
- o 1x 500 words application letter o1x Curriculum details

This subject comprises a practicum of at least 18-20 weeks duration which is spent in hospitals, community health centers, and other food-related organizations.

OFFER RELEASE DATE : Around Dec http://www.uow.edu.au/handbook/yr2014/pg/H14006776.html



REQUIREMENTS(at least 2 unit/course) 2x Biochemistry(Code 3000above)

2x Physiology(Code 2000above)

- 2x Nutrition course(Code 2000 above)
- 1x Research in method(Code 1000 above)
- 2x Chemistry(Code 2000 above)

ENGLISH REQUIREMENT

Academic IELTS : Overall 7 with no band below 7

SUPPLEMENTARY DOC.

- 2x Reference Letters
- 1x Supplementary form
- 1x Curriculum details

Known that admission is GPA-dependent. Normally, this course requires local students to have GPA 3.4 in order to be successfully admitted

OFFER RELEASE DATE : Around OCT http://www.uq.edu.au/study/program.html?acad_prog=5473

The University of Queensland



Master of Dietetics Studies (Code: 5473) Full Accreditation until 30 April 2017

KNOWN QUOTA FOR INTERNATIONAL STUDENTS : 6

TUITION FEE : \$AUD38580/year(2015) COURSE START DATE : 2/03 DURATION : 1.5 YEARS APPLICATION Period : ~JAN-310CT APPLICATION FEE : YES CONDITIONAL OFFER : No SCHOLARSHIP : No

La Trobe University



Master of Dietetic Practice (Code HMDP) Provisional Accreditation until 30 November 2016 REQUIREMENTS(at least 2 unit/course) 2x Biochemistry(Code 3000above)

2x Physiology(Code 2000above)

2x Nutrition course(Code 1000 above)

ENGLISH REQUIREMENT

Academic IELTS : Overall 7 with no band below 7

SUPPLEMENTARY DOC.

- 2x Reference Letters
- 2x Supplementary form 1x CV
- 1x 250 words application letter ●1x Curriculum details

TUITION FEE : \$AUD 28 390(2015) COURSE START DATE : 2/03 DURATION : 2 YEARS APPLICATION Date : 1 Sep APPLICATION FEE : No(via agent) CONDITIONAL OFFER : Yes SCHOLARSHIP : Yes

Both years of the degree include substantial professional placement in dietetic workplaces including clinical environments such as hospitals, community care, food service and advocacy.

OFFER RELEASE DATE : 1) 4-6weeks after your application

http://www.latrobe.edu.au/courses/dietetics/postgraduate



REQUIREMENTS(at least 2 unit/course) 3x Biochemistry(Code 3000above)

2x Physiology(Code 2000above)

Flinders University

ENGLISH REQUIREMENT

Academic IELTS : Overall 6.5 with no band below 6

SUPPLEMENTARY DOC.

- 2x Reference Letters
- 1x Supplementary form
- 1x Personal Statement

This includes 21 weeks of supervised practice in hospitals and community or public health settings.

OFFER RELEASE DATE : UNKNOWN http://www.flinders.edu.au/courses/rules/postgrad/mnd.cfm#admission-requirements Master of Nutrition and Dietetics (Code: 2CM093) Full Accreditation until 30 November 2015

> TUITION FEE : \$AUD\$30,400/year(2015) COURSE START DATE : 2/03 DURATION : 2 YEARS APPLICATION Period : ~March-31Nov APPLICATION FEE : YES CONDITIONAL OFFER : No SCHOLARSHIP : No

Deakin University



Master of Dietetics (Code: H718) Provisional Accreditation until 30 April 2015 REQUIREMENTS(at least 2 unit/course) 2x Biochemistry(Code 3000above)

2x Physiology(Code 2000above)

2x Nutrition course(Code 1000 above) 1x Chemistry course(Code 1000 above)

ENGLISH REQUIREMENT

Academic IELTS : Overall 7 with no band below 7

SUPPLEMENTARY DOC.

- 2 2x Reference Letters
- 1x Supplementary form
- 1x Curriculum details

3 courses of placement

OFFER RELEASE DATE : UNKNOWN

http://www.deakin.edu.au/future-students/courses/course.php?course= H718&stutype=local&keywords=master%20of%20dietetics

COURSE START DATE : 2/03 DURATION: 1.5 YEARS APPLICATION Date : ~Feb APPLICATION FEE : No(via agent) CONDITIONAL OFFER : Unknown SCHOLARSHIP : Unknown

TUITION FEE : \$AUD 29 288(2015)

REQUIREMENTS(at least 2 unit/course) 3x Biochemistry(Code 3000above)

2x Physiology(Code 2000above)

2x Nutrition course(Code 1000 above)

ENGLISH REQUIREMENT

Academic IELTS : Overall 7 with no band below 7 SUPPLEMENTARY DOC.

- 2x Reference Letters
- 1x Supplementary form

University of South Australia



University of South Australia

Master of Dietetics (Code: IMDT) Provisional Accreditation until 01 June 2015

> TUITION FEE : \$ AUD30,100/year(2015) **COURSE START DATE : 2/03 DURATION : 2 YEARS APPLICATION Date : ~ April APPLICATION FEE : YES CONDITIONAL OFFER : UNKNOWN SCHOLARSHIP : UNKNOWN**

OFFER RELEASE DATE : UNKNOWN http://programs.unisa.edu.au/public/pcms/Program.aspx?pageid=232&sid=584&tid=475&y=2012

Other programs that are accredited currently by DAA. Note that you may exempt 1-2 years of study if you choose to study Bachelor of nutrition and dietetics programs.

- Queensland University of Technology Bachelor of Nutrition and Dietetics (Code: XN44)
- University of the Sunshine Coast Bachelor of Nutrition and Dietetics (Course Code:SC353)
- La Trobe University Bachelor of Health Sciences and Master of Dietetic Practice (Code HZHSDP)

CHECKLIST FOR RD STUDY

- This checklist is for you to check whether all the necessary requirements are met
- Each courses should bear at least 2 unit
- It is just a reference and you need to double check the requirement before application
- This material is designed for CUHK FNSC students only.

Biochemistry (at least 2 of the following courses)

□BCHE3030	□BCHE3680	□ BCHE4060	□BCHE4660
□BCHE3040	□BCHE4010	□BCHE4080	□BCHE4830
□BCHE3080	□BCHE4020	BCHE4090	□FNSC3030
□BCHE3090	□BCHE4030	□BCHE4130	
□BCHE3630	BCHE4040	□BCHE4610	

Physiology (at least 2 of the following courses)

□FNSC5130 □FNSC5320

Chemistry (at least 2 of the following courses) - OPTIONAL

□CHEM1070 □CHEM1072 □CHEM1280 □Other Chemistry courses

Nutrition (at least 4 of the following courses)

□ FNSC2003 □ FNSC3010 □ FNSC4120 □ FNSC4160 □ FNSC4150

Materials you may need

Reference letters x2
 CV x1
 Curriculum details x1(Include only required courses)
 Personal statement x1
 Passport x1(Check expiry date)

□Offical transcript(Til year 4 sem 1) or Full transcript



- IELTS EXAM DATE :

https://ielts.britishcouncil.org.hk/iorps/html/registration/showExamSessionListServlet.do

- EXAM RESULTS WILL BE RELEASED 2 WEEKS AFTER EXAMINATION
- ACADEMIC MODULE IS NEEDED
- PEAK SEASON OF IELTS IS AROUND MAY JULY



This is the curriculum details of Food and nutritional sciences in the Chinese University of Hong Kong for application of master of dietetics and nutritional study.

> NOTE THAT IT IS JUST A TEMPLATE FOR YOUR REFERENCE. YOU NEED TO ADD OR REMOVE SOME COURSES FROM THE FOLLOWING LIST. !!!

[CURRICULUM DETAILS FOR MASTER OF DIETETICS AND NUTRITIONAL STUDY]

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Human Physiology

FNSC5130 Hui	man Physiology	
Course Detail		
Career	Postgraduate - Taught	
Units	3.00	
Grading Basis	Graded	
Course Component	s Lecture Required	
Enrollment Informati	on	
Enrollment Require	ment For Food and Nutritional Sciences undergraduates and students (both full- and part-time) of M.Sc. in Nutrition, Food Science and Technology.	

Description

This course focuses on the physiology in human beings. Students are provided with the current understanding of the mechanism behind each of the major human systems with emphasis on their relationship with food and nutrition. Systems which will be covered in this course include digestive, nervous, sensory, respiratory, endocrine, cardiovascular and renal ones. After taking this course, students are expected to be knowledgeable in the operation of the major human physiological systems, and in the application of them in their daily life.

Learning Outcome

This course focuses on seven physiological systems including digestive, nervous, sensory, respiratory, endocrine, cardiovascular and renal ones. After the lectures, a student should be able to 1 Differentiate among the different physiological systems in human 1 Describe in details the functions of the systems 1 Explain the mechanisms behind the activity of each system.

Details (References, Content, teaching hours)

The Chinese University of Hong Kong Food and Nutritional Sciences Programme FNSC 5130—Human Physiology

Year : 2013, 1st term Time : 9:30-12:30 pm (Sat) Location: Li Koon Chun Hall, LT1 Course Convenor : HY Chung, Ph.D.

Week	Lectu	re	Date	Person-In-Charge	Topic(s)	Chapter
			_			
1	1-3	Sept	7	W. GE	Introduction	1-6
2	4-6		14	W. GE	Cell Physiology	1-6
3	7-8		21	W. GE	Endocrine System	7,22,23
4	9-12		28	W. GE	Endocrine System	7,22,23
5	13-15	Oct	5	W. GE	Reproduction	26
6			12	Exam I (Lec	ture 1-15)	
7	16-18		19	XQ YAO	Respiratory System	17,18
8	19-21		26	YAO/HUANG	Respiratory/Muscle & Bone	17,18/12
9	22-24	Nov	2	Y HUANG	Muscle & Bone	12
10	25-27		9	Y HUANG	Heart	14
11			16	Exam II (Lecture 16-27)		
12	28-30		23	HY CHUNG	Neuron	8
13	31-33		30	HY CHUNG	Sensory Physiology	10
14		Dec	7	Exam III (Lecture 28-33)		

Evaluation:

Exam I	45%	2.0 h
Exam II	35%	1.5 h
Exam III	20%	1.5 h

References:

Silverthorn, D U. 2013. Human Physiology. An Integrated Approach. Pearson. HK.

Other references may be recommended by individual teacher in class.

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Course Detail	
Career Units Grading Basis	Postgraduate - Taught 3.00 Graded
Course Components	Lecture Required
Enrollment Information	
Enrollment Requirement	This course is offered to students in M.Sc. in Nutrition, Food Science and Technology, M.Phil in Food and Nutritional Sciences and undergraduates of Food and Nutritional Sciences Programme.

FNSC 5320 - Nutritional Physiology

Description

In this course, the physiological aspects of nutrition will be introduced. The course covers how nutrients may affect human physiologically in an organ-specific manner. Malnutrition can be interpreted as over- or under-nutrition. Together with the basic understanding of human anatomy and physiology, the pathophysiological impact of malnourishment will be discussed. Gastrointestinal, renal, cardiovascular, respiratory and endocrine systems will be covered.

Details (References, Content, teaching hours)

References

- Nutrition and metabolism / edited on behalf of the Nutrition Society by Susan A. Lanham-New, Ian A. MacDonald, Helen M. Roche; 2nd ed.. Chichester, West Sussex, UK ; Ames, Iowa : Wiley-Blackwell 2011
- Physiology : a clinical core text of human physiology with self-assessment / J.G. McGeown. 3rd ed., Edinburgh ; New York : Churchill Livingstone/Elsevier, 2007.

Content and teaching hours

LECTURE 1 (Jan 9, 2015)

COURSE INTRODUCTION (LKL)

A BRIEF REVIEW ON CELLULAR PHYSIOLOGY (LKL)

LECTURE 2 (Jan 16, 2015)

GASTROINTESTINAL PHYSIOLOGY I (LKL)

- Appetite and control
- GI motility
- Regulation of motility in GI

LECTURE 3 (Jan 23, 2015)

GASTROINTESTINAL PHYSIOLOGY II (LKL)

- GI secretion
- Control mechanisms of GI secretion
- Digestion and absorption

LECTURE 4 (Jan 30, 2015)

RENAL PHYSIOLOGY (LKL)

- Body fluid composition
- Kidney and nutrient reabsorption
- Regulation of nutrient reabsorption
- Control of extracellular pH

LECTURE 5 (Feb 6, 2015)

NUTRITION & CARDIOVASCULAR PHYSIOLOGY I (HY)

This series of lecture covers general cardiovascular physiology, the regulatory mechanisms of blood pressure, and dietary and nutritional connection to the cardiovascular diseases.

- Introduction
- Nutrients & Cardiac Electrophysiology (1)
- Nutrients & Cardiac Electrophysiology (2)

LECTURE 6 (Feb 13, 2015)

NUTRITION & CARDIOVASCULAR PHYSIOLOGY II (HY)

- Cardiac Cycle
- Contraction of myocardium
- Regulation of contraction of blood vessels

LECTURE 7 (Feb 27, 2015)

BLOOD PRESSURE AND DIET (HY)

- Regulation of blood pressure
- Hypertension and nutrition
- Diet and cardiovascular health

LECTURE 8 (Mar 6, 2015)

THE SKELETAL SYSTEM (HY)

- Ion channels
- Contraction of skeletal muscle
- Neuromuscular junction and dysfunction

LECTURE 9 (Mar 20, 2015)

GENERAL NEUROPHYSIOLOGY (YX)

- Synapses and Neurotransmitters
- Neuronal Circuit
- Sensory Receptor and Receptor potential

LECTURE 10 (Mar 27, 2015)

SENSORY PHYSIOLOGY (YX)

- Sensory Coding
- Visual System
- Smell, Taste, Flavour, and Nutrition

LECTURE 11 (Apr 10, 2015)

NUTRITION AND THE BRAIN (YX)

- Function of brain regions
- Learning and Memory
- Sleep
- Behaviour

LECTURE 12 (Apr 17, 2015)

NUTRITION AND THE BRAIN II (YX)

- Brain and Nutrition
- Neurologic DiseasesControl of Food intake

Biochemistry

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Course Detail	
Career	Undergraduate
Units	2.00
Grading Basis	Graded
Course Components	Lecture Required

BCHE4090 Biochemistry for Sport and Exercise

Description

This course aims at introducing various biochemical aspects of sports and physical activities of human beings to the students. The course will cover fundamental sports physiology and basic anatomy; major proportion of the lectures will be dedicated to designated topics related to the biochemical aspects of sports and physical activities, such as energy utilization, neuro-muscular control, nutrition and fat cell biochemistry, fatigue and recovery, traumas and therapeutics, principles of doping, etc. Lectures will be supplemented with discussions and presentations.

Course Objectives

This course aims at introducing various biochemical aspects of sport and physical activities to the students. The course is designed to cover some basic anatomy, energy utilization, cardiac functions, injury mechanisms, sports therapeutic principles, endocrine effects on physical activities, nutrition for sports, physical activities in extreme conditions, and physical activities for the diseased population. The course welcomes students with basic knowledge in biological science, where various in-class activities are integrated so as to let the students apply, analyze, and evaluate the academic knowledge in daily life. The training of students' creativity, question asking, critical thinking, goal-setting, self-learning, and decision making skills will also be emphasized: students are encouraged to participate in the self-reflective activities, workshop, and group activities. Throughout the learning process, it is anticipated that the students will not only acquire the academic knowledge, they will also consolidate their learning and acquire useful skills for both personal and professional aspects.

Learning Outcomes:

• Master the fundamental knowledge of physiology and anatomy of the skeletomuscular system;

• Comprehend the basic knowledge of the selected topics of sports biochemistry;

• Experience and apply the knowledge of sports biochemistry in every-day-life scenarios;

• Identify, analyze, and comment on the relationship between biochemistry and physical activities;

• Develop practical skills in goal-setting, problem-solving, team-work, and communication skills;

• Gain learning methodologies that promote life-long learning in biochemistry and other related disciplines.

Textbooks:

- ACSM's advanced exercise physiology (Farrell et al); [WE103 .A83 2012]
- ACSM's guidelines for exercise testing and prescription (Thompson et al); [WE103 .A45 2010]
- Biological psychology (James W Kalat); [WL102 .K33 2013]
- Essential haematology (Hoffbrand & Moss); [WH120 .H627 2011]
- Exercise physiology : nutrition, energy, and human performance (McArdle et al); [QT260 .M375 2010]
- Managing sports injuries (Christopher M Norris); [available online]
- Marks' basic medical biochemistry : a clinical approach (Lieberman et al); [QU4 .S574
- Medical biochemistry (Baynes & Dominiczak); [available online]
- Principles of anatomy & physiology (Tortora & Derrickson); [QS4 .T67 2012]
- Principles of athletic training (Arnheim & Prentice); [QT260 .A76 1995]
- Robbins and Cotran pathologic basis of disease (Robbins et al); [available online]
- Sports and exercise nutrition (McArdle et al); [TX361.A8 M38 2013]
- Wilderness medicine (Paul S Auerbach); [available online]

Schedule		
Week	Date	Contents
1	10 Jan	- Course introduction
1	TO Jan	- Skeletal system
2	17 lon	- Muscular and nervous system
2	T\ J9U	- Class activity I: body posture
		- Neuromuscular control
		- Muscle contraction and synthesis
3	24 Jan	- Bone synthesis
		- Soft tissue biochemistry
		- Class activity II: balancing the body
	31 Jan	- Chinese New Year
4	7.5-6	- Energy utilization at rest and during physical activities
4	7 Feb	- Class activity III: estimation of basal metabolic rate
		- Haematology
_		- Cardiac functions for physical activities
5	14 Feb	- Cardiovascular system during physical activities
		- Class activities IV: blood pressure measurement
		- Quiz: skeletomuscular system
c	21 Feb	- Molecular mechanism of cellular injury and recovery
ь		- Ischemia, inflammation, and spasm
		- Fatigue and rest
7	20.5-6	 Adaptation mechanisms to extreme environments
/	28 Feb	- Class activity V: mind-map drawing
		- Endocrine effect on physical activities
8	7 Mar	- Biochemical principles of training
		- Biochemical principles of doping
		 Physical activities for the diseased population
0	14.14	- Nutrition for sports
9	14 Mar	- Fat cell biology
		- Class activity VI: measurement of body fat composition
10		- Physical activities in extreme conditions
	21 Mar	- Biochemical principles of sports therapeutics
		- Class activity VII: measurement of blood O ₂ saturation
11	20.14	- Creative workshop
	28 Mar	- Critique on mind-map
12	4 Apr	- Group activity
13	11 Apr	- Group activity

FNSC 3030 - Nutritional Biochemistry

Course Detail	
Career	Undergraduate
Units	3.00
Grading Basis	Graded
Course Components	Lecture Required
Enrollment Information	
Enrollment Requirement	Co-requisite: FNSC3031.

Description

This component will provide students with the background required to appreciate the biochemical aspects of nutrition and the impact of nutrition-related factors on normal human biochemistry. Areas covered include the digestion and absorption of nutrients, energy intake and expenditure, nutrition and metabolism of carbohydrate, cholesterol synthesis and homeostasis, metabolism of dietary fats and their effect on lipoprotein cholesterol, nitrogen metabolism, and minerals and vitamins and their roles in biochemical processes.

Details

PART I Energy and metabolism, intake and expenditure PART II Nutrition and metabolism of carbohydrates PART III Nutrition and metabolism of proteins PART IV Nutrition and metabolism of vitamins PART V Nutrition and metabolism of fats PART VI Metabolism of cholesterol and lipoproteins

The learning outcomes:

PART I Energy intake, expenditure and metabolism Objectives: After these lectures, a student should be able to

• describe changes in body composition from birth to adulthood.

• define the basal metabolic rate (BMR), resting metabolic rate (RMR), and dietinduced thermogenesis (DIT).

• describe the methods used in estimating BMR and RMR.

- calculate the energy content of a mixed diet
- identify the functions of brown fat tissue in energy metabolism.
- describe the role of carbohydrate in energy metabolism.

PART II Nutrition and metabolism of carbohydrates Objectives: After these lectures, a student should be able to

• identify the mechanisms by which the plasma glucose level is regulated.

• define the glycemic index and explain how it is useful in the control of diabetes mellitus.

• outline the metabolic differences between glucose and fructose.

• describe the influences of dietary fructose on plasma LDL-cholesterol, HDLcholesterol and triglyceride and explain the possible mechanisms involved.

define insoluble and soluble fibers, and give some examples and source of each.
identify the health effect of dietary fibers and explain the possible mechanisms

involved.

• explain the biochemical basis of major inborn disorders of carbohydrate metabolism.

• list some major commercial artificial sweeteners and some specific characteristics of each.

PART III Nutrition and metabolism of proteins Objectives: After these lectures, a student should be able to

• define the essential amino acids.

• define nitrogen balance and its application in the determination of protein requirement.

• identify the general steps by which amino acids are converted to glucose in fasting and starvation.

• explain the biochemical basis of homocystinuria and its atherogenic effect.

• explain the biochemical basis of phenylketonuria.

describe the differences between animal and plant proteins.

• identify the positive and negative effects of vegetarian diets.

PART IV Nutrition and metabolism of vitamins Objectives: After these lectures, a student should be able to

• describe the functions of fat-soluble vitamins.

• describe the structures and functions of B vitamins.

• define the term coenzymes and their role in energy metabolism.

• explain why some vitamins are essential to energy metabolism.

describe some common biochemical tests to assess the vitamin status.

describe the symptoms of various vitamin deficiency diseases.

PART V Nutrition and metabolism of fats Objective: After these lectures, a student should be able to

• describe the nomenclature of lipids used in nutrition.

• describe the characteristics of omega-3, omega-6 and omega-9 fatty acids.

• identify the characteristic features of vegetable oils, fish oil and animal fats, and their potential nutritional significance.

• identify the biochemical pathway by which linoleic acid is converted to arachidonic acid.

 \bullet identify the biochemical pathway by which $\alpha\mbox{-linolenic}$ acid is converted to docosahexaenoic acid.

• identify the biochemical pathway by which oleic acid is converted to eicosatrienoic acid.

• list the chemical reactions and enzymes involved in chain-elongation and - desuration.

• identify the enzymes and biochemical pathway in fatty acid synthesis.

• understand the mechanisms by which dietary fatty acid composition affects lipogenesis.

• describe the possible health effects of trans fatty acids.

• list some common fat substitutes and the proposed use in food industry.

• explain why olestra is neither digested nor absorbed. PART VI Nutrition and

metabolism of cholesterol and lipoproteins Objectives: After these lectures, a student should be able to

• identify the major dietary factors influencing the level of plasma cholesterol.

• identify the biochemical pathway by which cholesterol is synthesized and degraded.

 describe the roles of cholesterol-7α-hydroxylase and acyl CoA: cholesterol acyltransferase (ACAT) in metabolism of cholesterol.
 classify the inborn lipoprotein disorders.

• describe the processes by which cholesterol is digested, mobilized and transported in the body.

• define the hyperlipoproteinemia.

• understand the mechanism by which dietary plant sterols decrease the risk of atherosclerosis.

Nutrition/Nutritional Sciences

FNSC 2003 - Food, Nutrition and Health

FNSC 2003 - Food, Nutrition and Health

Course Detail	
Career	Undergraduate
Units	2.00
Grading Basis	Graded
Course Components	Lecture Required
Enrollment Information	
Enrollment Requirement	Not for students who have taken FNSC2000, 2001 or 2002; Prerequisite: BCHE2030 and BIOL2120.

Description

This course provides an overview of various topics in food science and technology and basic concepts of nutritional sciences. Lectures will include discussions of general areas of interest chosen to stimulate and foster students' interest in both food and nutritional sciences. This course will cover topics such as basic food science and technology, and application of the principles of nutrition in everyday life. Students will also be able to identify some common local food-related problems and the role of nutrition in prevention and therapy.

Learning Outcome

For Food,

-Define Food Science and Food Technology

-Understand the dimensions of food processing and preservation

-Grasp the basic information in food chemistry, food microbiology and food product development, and be able to utilize them in the preparation of safe and high quality food products

- Tell the current trends and advancements in Food Science and Technology

For Nutrition,

-Define the science of nutrition, and discuss the importance of nutritional adequacy and balance for optimal growth and health

-Identify the dietary sources, functions and key roles in health protection of the major nutrients

-Discuss the health effects of the major nutrients in terms of deficiency and excess

-Identify some common Hong Kong nutritional problems and some current nutritional issues of health or research significance

-Interpret the common media presentations of nutrition information-valid or flawed?

-Apply the principles of good nutrition in their own lives to the planning of healthy eating for optimal performance and disease prevention

Syllabus

- -Introduction and Food Composition
- -Cereal Grains and Their Products -Fruits and Vegetables -Beverages
- -Fermented Foods -Seafood -Nutrition Recommendation
- -Macro- & Micro-nutrients -Nutrition & Diseases -Healthy Eating
- Nutrition and Immunity
- -Antioxidants from Foods to Herbal Medicine
- -Nutrition and Aging What Do We Know So Far?

Textbooks

-Brown, Amy. 2008. Understanding Food: Principles & Preparation. (3rd ed.), Wadsworth Cengage Learning, Belmont, CA, USA (TX354.B684 2008).

-Murano, Peter S. 2003. Understanding Food Sciences and Technology. Thomas Learning, Belmont, CA, USA (TP370 M87 2003).

-Gibney M.J. et al. 2009. Introduction to Human Nutrition (2nd ed.), Wiley-Blackwell, Ames, Iowa, USA (UL QU145I665 2009).

Course Detail Career Undergraduate Units 3.00 Grading Basis Graded Course Components Lecture Enrollment Information Enrollment Requirement Co-requisite: FNSC3011.					
Career Undergraduate Units 3.00 Grading Basis Graded Course Components Lecture Required	Course Detail				
Units 3.00 Grading Basis Graded Course Components Lecture Required	Caroor	U. dama durata			
Units 3.00 Grading Basis Graded Course Components Lecture Required Enrollment Information Enrollment Requirement Co-requisite: FNSC3011.	Career	Undergraduate			
Grading Basis Graded Course Components Lecture Required Enrollment Information Co-requisite: FNSC3011.	Units	3.00			
Course Components Lecture Required Enrollment Information Co-requisite: FNSC3011.	Grading Basis	Graded			
Enrollment Information Enrollment Requirement Co-requisite: FNSC3011.	Course Components	Lecture	Required		
Enrollment Requirement Co-requisite: FNSC3011.	Enrollment Information				
	Enrollment Requirement	nt Co-requisite: FNSC3011.			

FNSC 3010 - Nutrition and Human Development

Description

Since our body is experiencing changes in the life cycle, the nutrition needs would be different in various stages. This course describes the basis of these needs. Furthermore, the assessment of nutrient intake and physiology of our body in different life-cycle stages will be discussed. Prevention of chronic diseases through prudent dietary practices will also be introduced.

Course Syllabus

PART

I INTRODUCTION TO THE ROLE OF NUTRITION IN THE LIFE CYCLE

- 1.1 Overview of 40 nutrients Dietary Reference Intakes (DRIs)
- 1.2 Food groups (types) 1.3 Nutritional assessment and Food labels

1.4 Nutrition Transition in China

PART II MATERNAL NUTRITION

2.1 Physiology of pregnancy

2.2 Metabolism of lipids, carbohydrates and proteins in pregnancy

2.3 Effect of maternal diet on fetal development

- 2.4 Nutrient needs for pregnancy
- 2.5 Harmful substances in breast milk

PART III LACTATION AND HUMAN MILK

- 3.1 Physiology of lactation
- 3.2 Nutrients in human milk

3.3 Non-Nutrients in human milk

3.4 Nutrient recommendations for lactating women

3.5 Breast feeding vs bottle feeding

PART IV NUTRITION DURING INFANCY

4.1 Growth and maturation

4.2 Nutrient needs of infants - energy, protein, carbohydrate, lipids, minerals, vitamins

4.3 Nutrient comparison – Human milk and formulas

4.4 Food choice for infants at different stages of development

PART V NUTRITION IN CHILDHOOD

5.1 Physical growth and its assessment during childhood

- 5.2 Baby Formula Standardization
- 5.3 Nutrient needs of children preschool vs school age

PART VI NUTRITION IN ADOLESCENCE

6.1 Adolescent growth and development 6.2 Nutritional assessment and requirements

6.3 Eating disorders

6.4 Childhood and adolescent obesity

6.5 Obesity treatment

PART VII NUTRITION IN THE ADULT

7.1 Planning for a healthy lifestyle

- 7.2 Nutrition requirements in general
- 7.3 Dietary recommendations for reducing heart disease and cancers
- 7.4 A nutritional problem an imbalance of sodium and potassium intake in Chinese

PART VIII NUTRITION FOR THE ELDERLY

- 8.1 Physiological aspects of ageing
- 8.2 A nutritional problem in elderly calcium deficiency
- 8.3 Nutrient requirements of older people
- 8.4 Food selection of elderly
- 8.5 Programs for meeting needs of the elderly

Reference Books:

1. Understanding Nutrition, Whiteney EN and Rolfes SR, 2010. Wadsworth Publishing Inc.

2. Modern Nutrition in Health and Diseases (8th edition), Shils ME, Olson JA and Shike M, 2005. Lea and Febiger

3. Nutritional biochemistry and metabolism, with clinical applications, Linder MC, 1991 Appleton and Lange

4. Understanding Normal and Clinical Nutrition. (8th edition), Rofles SR, Pinna K and Whitney E, 2009. Wadsworth Publishing Inc.

Course Detail		
Career	Undergraduate	3
Units	3.00	
Grading Basis	Graded	
Course Components	Lecture	Required

FNSC 4120 - Community Nutrition

Description

Community nutrition recognizes that the control and prevention of nutrition problems are not merely biomedical in nature, but are embedded in the community of the affected individuals. A community nutritionist assesses and monitors not only physiological and dietary, but also social, cultural, technological and psychological information from many sources to determine needs and identify opportunities for sound, appropriate interventions that improve nutritional health. Because wellconceived nutrition surveys are basic tools for prioritising problems and deciding program plans and evaluations to provide better nutrition services to the public, the course will first introduce community nutrition survey design to the students. Making healthier choices, however, requires lifelong change in thinking and action at both individual and community levels. The rest of the course examines applications of current individual and group nutritional behaviour change theories to promote healthier diets.

Learning Outcome

-Discuss the work of community nutrition in preventing disease and promoting health

-Design a nutrition survey, demonstrating appropriate use of methodology and statistics

-Discover findings, and arragne, interpret and present results from a nutrition survey

-Appreciate the interrelationships of social, cultural, technological and psychological factors in determining food choice and eating habits

-Describe how to apply some theoretical models of individual, interpersonal, and group health behaviors to designing nutrition intervention strategies

Course Syllabus

-Community nutrition and nutrition survey research

-Nutrition promotion and nutrition behavior change theories

Reference books:

-Community Nutrition: Applying Epidemiology to Contemporary Practice, 2nd ed. Gail C Frank. Jonese and Barlett Publishers, 2008 QU 145 F69 2008

-Nutrition in Public Health: Principles, Policies and Practice. A Spark, QU145 S63 2007 -Nutrition Education, Linking Research, Theory and Practice by I Contento. Joense and Bartlett Publishers, Sudbury Mass, USA. 2007. WB18 C759n 2007

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Course Detail			
Career	Undergraduat	e	
Units	3.00		
Grading Basis	Graded		
Course Components	Lecture	Required	
Enrollment Information			
Enrollment Requirement	Pre-requisite:	FNSC4120.	
Enrollment Information Enrollment Requirement	Pre-requisite:	FNSC4120.	

FNSC 4160 - Nutrition Planning and Food Policy

Description

This course explores the emergence of food and nutrition policies from their multisectoral agricultural, population, health, environmental, economic, technological and political origins. The class will examine case studies from the international arena, focusing on Asian regional and local food and nutrition policy developments. Because nutrition promotion to the public is an integral component of these policies, a final portion of this course is devoted to the design of effective nutrition promotion and communication strategies for specific groups, including needs assessment, planning, implementation and evaluation.

Course Syllabus

-World Food Production, Hunger, and Overnutrition

-Origins of Food and Nutrition Policies -Regional/Local Nutrition Policy Case Studies

-HK Food Production: Agriculture, Fisheries, Industry

-Food Needs/Supply and Environment -Economic Considerations

-Dietray Recommendations

-Functional Foods/Introduction to Nutrition Promotion

-Nutrition Promotion Development

-Programme Evaluation and Reportng; School Nutrition Promotion

-Worksite and Older Adult Nutrition Promotion -Breastfeeding Promotion

Textbooks

Health program planning and evaluation: a practical, systematic approach for community health / L. Michele Issel, 2004. Articles and material as recommended by instructors; WebCT materials

FNSC 4411 - Directed Research in Food and Nutritional Sciences I

Course Detail Career Undergraduate Units 2.00 Grading Basis Graded
Career Undergraduate Units 2.00 Grading Basis Graded
Career Undergraduate Units 2.00 Grading Basis Graded
Units 2.00 Grading Basis Graded
Grading Basis Graded
Course Components Project Required
Enrollment Information
Course Attribute STOT Course

Description

In this course, students will undertake a small research project under the supervision of a faculty member. Research work will commence during the summer vacation immediately preceding the student's final year of attendance. The results of the research, as they relate to the recent relevant literature, will be presented as a seminar during the final year.

Learning Outcome

To demonstrate the competencies and abilities in planning, organizing, scheduling and executing a research project To integrate their knowledge and skills learnt previously in other courses to complete a food science or nutrition project To effectively communicate with the others of their findings orally

FNSC 4421 - Directed Research in Food and Nutritional Sciences II

Course Detail			
Career	Undergraduate		
Units	2.00		
Grading Basis	Graded		
Course Components	Project	Required	
Enrollment Information			
Enrollment Requirement	Prerequisite: FN	SC4411.	
Course Attribute	STOT Course		

Description

Students will meet periodically with the supervisor to discuss and interpret their research data. These discussions will culminate in the production of a comprehensive written report which will be submitted for assessment near the end of the student's final term of attendance.

Learning Outcome

To demonstrate competencies in critically analyzing data collected in the research project To integrate their knowledge in interpreting the results obtained in the research project To effectively communicate with the others of their findings in written format

Course Detail			
Career	Undergraduate		
Units	1.00		
Grading Basis	Graded		
Course Components	Laboratory	Required	
Enrollment Information			
Enrollment Requirement	Co-requisite: FN	SC4120.	

FNSC 4121 - Community Nutrition Laboratory

Learning Outcome

-Conduct a nutrition/health survey, including: coding, data entry, verification, analysis and writing a report with adequate attention to quality control at each step

-Use the software SPSS to manage and statistically analyze data, choose appropriate basic statistical tests for data analysis, and correctly interpret the results

-Prepare the various components of a good survey report and compose a complete one that contains the required information including the appropriate presentation of results

FNSC 3011 - Nutrition and Human Development Laboratory

Undergraduate		
1.00		
Graded		
Laboratory	Required	
Co-requisite: FN	SC3010.	
	Undergraduate 1.00 Graded Laboratory Co-requisite: FN	Undergraduate 1.00 Graded Laboratory Required Co-requisite: FNSC3010.

Description

This course will cover the laboratory part of FNSC3010-Nutrition and Human Development. Techniques on body composition measurement and dietary intake assessment will be introduced in the first laboratory session. Red Cell Indices for assessing nutritional status will be carried out in the second session. The remaining laboratory sessions will be dedicated to examining our body regulation on intake and storage of micronutrient, e.g. vitamins and minerals. Functions of these micronutrients will be taught/reviewed as the background of the laboratory sessions.

1) Learn the techniques on the body composition measurement and dietary intake assessment.

2) Know the Red Cell Indices for assessment of nutritional status.

3) Understand the body regulation on micro-nutrients intake and storage, e.g. vitamins and minerals absorption and regulation. After the laboratory, a student should be able to Understand the concept of body fat measurement using skinfolds. Define the body mass index (BMI) Use BMI to classify obesity Identify the difference in body fat between a girl and a boy. Describe the four methods used in dietary survey Identify the advantages and disadvantages of diet recall method. Know how to use dietary survey to assess the nutritional status of a population. Understand the relationship between DRI and a nutritional survey. Describe the iron-deficiency induced anemia. Understand the functions of hemoglobins. Identify iron requirement across the life span. Describe the function of each heme-containing protein in body. Master the techniques involved in measurement of plasma iron. Understand the function of vitamin C in cells. Identify the major sources of vitamin C. Understand the relationship between vitamin C and ascorbic acid. Describe the factors that affect stability of vitamin C in foods. Compare the advantages and disadvantages of different methods in vitamin C measurement. Understand the functions of calcium. Understand the functions of calcitonin, vitamin D and parathyroid hormones in calcium metabolism. Understand the relationship between osteoporosis and calcium. Describe the chemical composition of bone. Describe the major factors that cause osteoporosis. Describe the major dietary sources of calcium. Understand the role of estrogen and androgen in bone formation.

Food chemistry

FNSC 3110 - Food Chemistry and Analysis

Course Detail			
Career	Undergraduate		
Units	3.00		
Grading Basis	Graded		
Course Components	Lecture	Required	
Enrollment Information			
Enrollment Requirement	Co-requisite: FN	SC3111.	

Description

This course will cover the basic chemical and analytical aspects of major food components (water, carbohydrates, lipids and proteins) and minor food components (vitamins, minerals, pigments and food additives including flavors, colorants and preservatives). Emphasis will be made on the chemical reactions and changes in these food constituents during processing, handling and storage. The principles and applications of chemical and instrumental analysis of food will be illustrated. The actions and applications of enzymes in food manufacture and food spoilage will be discussed.

Learning Outcome

This course contributes as one of the core competencies in food science. After the students have finished the learning activities in FNSC3110, they will be able to: 1 Understand the chemistry underlying the properties and reactions of various food components l

Have sufficient knowledge of food chemistry to control reactions in foods 1 Understand the major chemical reactions that limit shelf life of foods 1

Understand the principles behind analytical techniques associated with food

The detailed content of the course is as follows:

Teaching: 37 lecture hours and mid-term examination:

2 lecture hours I. Water [2 lectures] n

Water structure: physical characteristics and water-solute interactions n

Water activity: definition, sorption isotherms n

Reaction rates and water content: physical changes, chemical reactions and microbial growth n

Importance of water activity

II. Food Carbohydrates [6 lectures] Classification of food carbohydrates Chromatographic analysis of carbohydrates Food-related chemical reactions of carbohydrates Functional properties of food polysaccharides Dietary fiber: definition, constituents and methods of analysis

III. Food Lipids [5 lectures] § Fatty acids: nomenclature and saturation § Analysis of lipids § Chemical degradation: rancidity (oxidation) and effects of heat § Physical properties of triglycerides § Emulsions and emulsifiers § Fat replacers and mimetics § Fats and oils in the marketplace § Hydrogenation and Trans fatty acids

IV. Food Proteins [5 lectures] n Protein classification and structure n Protein denaturation n Chemical changes in proteins n Functional properties of proteins n Food proteins from animal and plant origins

V. Food Additives and Contaminants [5 lectures] Food additives: purposes, definitions and functional categories Local issues on food additives Selected examples of food additives: their properties and applications Contaminants (incidental additives)

VI. Food Colorants [4 lectures] n Natural food pigments Tetrapyrrole pigments - myoglobin and chlorophyll Isoprenoid derivatives - carotenoids Benzopyran derivatives – anthocyanins and flavonoids n Artificial/synthetic colorants Certified color dyes and lakes Regulatory and safety aspects

VII. Micronutrients [5 lectures] Vitamins: sources, degradation and functional properties Fat-soluble (Vitamin A and E) Water-soluble (C and B1) Chemical analysis Vitamins: colorimetric and HPLC methods Mineral: ashing procedures and atomic absorption spectrophotometry (AAS)

VIII. Food Enzymes [5 lectures] § Classification and numbering system § General applications of food enzymes § Specific examples of food enzymes Hydrolysis of starch by amylases Pectic enzymes and fruit juice processing Proteases in milk and cheese production Polyphenol oxidases and enzymatic browning Lipases and lipoxygenases for flavor and off-flavors development

Textbooks

DeMan J.M. (1999) Principles of Food Chemistry, 3rd edition, An Aspen Publication.

References

1. Owusu-Apenten, R. (2005) Introduction to Food Chemistry, CRC Press.

2. Sikorski Z.E. (2007) Chemical and Functional Properties of Food Components, 3rd edition, CRC Press.

3. McWilliams, M. (2008) Foods: Experimental Perspectives, 6th edition, Pearson Prentice Hall.

4. Demodaran et al. (2008). Fennema's Food Chemistry, 4th edition, CRC Press.