FOOD NUTRITION AND HEALTH

Online

MSc

Graduate Diploma

Graduate Certificate

School of Agriculture and Food Science

Food Science and Nutrition

Science Centre South

University College Dublin

Dublin 4

Ireland

Contents

1.0 WELCOME

Welcome to UCD and to the postgraduate programmes in Food Nutrition and Health.

You have already taken the first steps in transforming and developing you career by joining us on this new and exciting journey. These programmes are not just about gaining subject matter expertise in Food Nutrition and Health. Our ambition for you is deeper than that. Our aim is that when you graduate with either a Graduate Certificate, Diploma or MSc, you will leave us with your horizons expanded and be equipped with the skills, knowledge and expertise necessary to foster your intellectual growth and professional ability so that you can define and adapt your career in a world that is changing rapidly.

In Newman's words:

"If then a practical end must be assigned to a University course, I say it is that of training good members of society... It is the education which gives a man a clear, conscious view of their own opinions and judgements, a truth in developing them, an eloquence in expressing them, and a force in urging them. It teaches him to see things as they are, to go right to the point, to disentangle a skein of thought to detect what is sophistical and to discard what is irrelevant."
John Henry Newman, The Idea of a University

Whilst each of you is pursuing your own career pathway, in order for you to be successful there is a range of fundamental skills that you will need to develop in parallel with the acquisition of subject specific knowledge. These include developing the critical cognitive skills of analysis, evaluation and synthesis as well as connecting with your innate creative ability, acting creatively and becoming familiar with the Design Thinking Process. During the course of the programme you will develop your capacity for independent research, analysis and ethical experimental design.

Teamwork, collaboration and communication are essential skills for 21st century life and the world of work. You will have the opportunity to become connected with your fellow students from a range of disciplines and different cultures, and utilise the online nature of the course to strengthen your connectedness so that together you can design innovative and creative solutions to a range of real problems. The MSc will also allow you to develop a network of colleagues and mentors and you will be exposed to a range of experts from different disciplines. This will enhance your personal and professional development.

Some of you are joining us directly onto the MSc, others are taking the module to masters route and are studying the qualifying modules this semester. However you spend your time with us at UCD, we hope that you will find it enjoyable, stimulating and professionally rewarding. We welcome your enthusiasm and the energy you bring to UCD and we always appreciate your feedback on any aspect of course delivery.

During the semester each module is supported by an e-tutor. E-tutors are appointed to assist you with any module related issues. Your e-tutor will login to the learning environment frequently and will answer any questions you might have usually within 24h. He/she will host

online discussions during the course of your assignments and will bring any issues you might have to the attention of the module or programme co-ordinators.

Semester 1 starts on

Monday 7th September 2015

For the time being, good luck in your studies and we look forward to being part of a vibrant student-teacher team. We have much to learn from one another and in the course of time much to contribute mutually to innovative developments in Food Science, Nutrition and Health

I hope you find the following information useful but please remember that either myself or other members of the team are always willing to assist if you have any questions. There are further contact details in this guide.

Dr. Aideen Mc Kevitt,

Programme Coordinator,

Room 2.15

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2.0 PEOPLE

Programme Coordinator	Dr Aideen McKevitt aideen.mckevitt@ucd.ie +353 1 716 2806
Graduate Administrator	Ms Karen Holland karen.holland@ucd.ie +353 1 716 7193
Programme Administrator	Ms Annette Patchett annette.patchett@ucd.ie +353 1 716 7353
Programme Office Contact Details	agandfoodprogrammes@ucd.ie +353 1 716 7194 http://www.ucd.ie/agfood/staff/
Student Adviser	Ms Naoimh O'Regan naoimh.oregan@ucd.ie +353 1 716 7745 www.ucd.ie/advisers

Module	**Co-ordinator**
FDSC40530 Physiology & Metabolism	Dr Nigel Brunton nigel.brunton@ucd.ie
HNUT40060 Intro to Nutrition	Dr Eileen Gibney eileen.gibney@ucd.ie
FDSC40500 Chemistry of Nutrients	Dr Jean Jacquier jean.jacquier@ucd.ie
IA40310 Creativity and Innovation	Mr. Troy Mc Connell troy.mcconnell@ucd.ie
FDSC40520 Food Microbiology & Safety	Dr Amalia Scannell amalia.scannell@ucd.ie
HNUT40090 Pathways to Health	Dr Eileen Gibney eileen.gibney@ucd.ie
PHPS 40720 Public Health Nutrition	Dr Celine Murrin celine.murrin@ucd.ie
HNUT 40100 Food Regulatory Affairs	Dr Aideen McKevitt aideen.mckevitt@ucd.ie
FDSC40590 Milk and Dairy Products	Mr Michael O'Sullivan michael.osullivan@ucd.ie
HNUT40150 Nutritional Assessment	Dr Eileen Gibney eileen.gibney@ucd.ie
HNUT40070 Nutrients in the Life Cycle	Dr Aifric O'Sullivan aifric.osullivan@ucd.ie
FDSC40510 Food Chemistry	Dr Niamh Harbourne niamh.harbourne@ucd.ie
FDSC40540 Food Process Technology	Professor James Lyng james.lyng@ucd.ie
FDSC40600 Principles of Sensory Science	Dr Amalia Scannell amalia.scannell@ucd.ie
FDSC40550 Meat and Meat Products	Professor Frank Monahan frank.monahan@ucd.ie
HNUT40080 Omic Strategies in	Dr Lorraine Brennan

Nutrition	lorraine.brennan@ucd.ie
PHPS40710 Promoting Consumer Nutrition	Dr Celine Murrin celine.murrin@ucd.ie
HNUT40110 Food Quality and Safety	Dr Aideen McKevitt aideen.mckevitt@ucd.ie
FDSC40570 Food Marketing	Dr Chenguang Li chenguang.li@ucd.ie
HNUT40130 Research Design and Statistics	Dr Aideen McKevitt aideen.mckevitt@ucd.ie
FDSC40580 Project Module	Dr Aideen McKevitt aideen.mckevitt@ucd.ie

3.0 UCD

University College Dublin has been providing students with a high quality educational experience for over 150 years and is one of Europe's leading research-intensive universities. At UCD undergraduate education, MSc and PhD training, research, innovation and community engagement form a dynamic spectrum of activity.

Today UCD is Ireland's largest and most diverse university with over 30,000 students, drawn from approximately 121 countries. UCD promotes university life as a journey of intellectual and personal discovery. UCD is Ireland's leader in graduate education with approximately 8,000 graduate students. The University is home to over 6,000 international students and delivers degrees to over 5,000 students on overseas campuses. In addition, the University places great emphasis on the internationalisation of the Irish student experience – preparing all UCD students for future employment and life that crosses borders, boundaries and cultures.

We now offer a UCD education and qualifications through a selection of online courses. Flexible online delivery means you can learn on-demand and in your own time with all the reassurance of UCD expertise and support. UCD Online helps you to expand your existing knowledge, study for a professionally recognised qualification, or gain new expertise to change career. UCD Online offers prospective students a flexible alternative to receiving a third level qualification delivered and supported by the same academics that teach in University College Dublin. There is no difference between qualifications achieved through UCD campus or UCD Online and students can look forward to the same quality teaching albeit through online delivery enabled by modern technologies. UCD Online's Module to Masters pathway increases the flexibility of study options by allowing students to complete a course in a time frame that suits their own personal circumstances, without incurring additional course fees. The courses offered by UCD Online have been selected to satisfy both student and employer demands. The offerings are diverse and focused towards producing high quality graduates in a chosen field, who are equipped with the necessary skills to gain employment in a given sector. Each course descriptor gives an overview of where a student's new skill may take them in terms of both employment and academia.

Since all UCD Online students are members of the UCD community they each obtain a UCD student card providing them access to UCD Services such as the library, sports centre and other campus/online facilities and services. Student discounts are available from numerous entertainment and retail outlets. UCD Online students are also given opportunities to visit campus including upon successful completion of a degree course when they will be invited to a graduation ceremony amongst their UCD Online and campus-based peers.

3. 1 COURSE OVERVIEW

The importance of the link between food and human health is becoming increasingly evident and graduates of the MSc in Food, Nutrition and Health course will be educated to a high level in the science of food as it pertains to human nutrition and health.

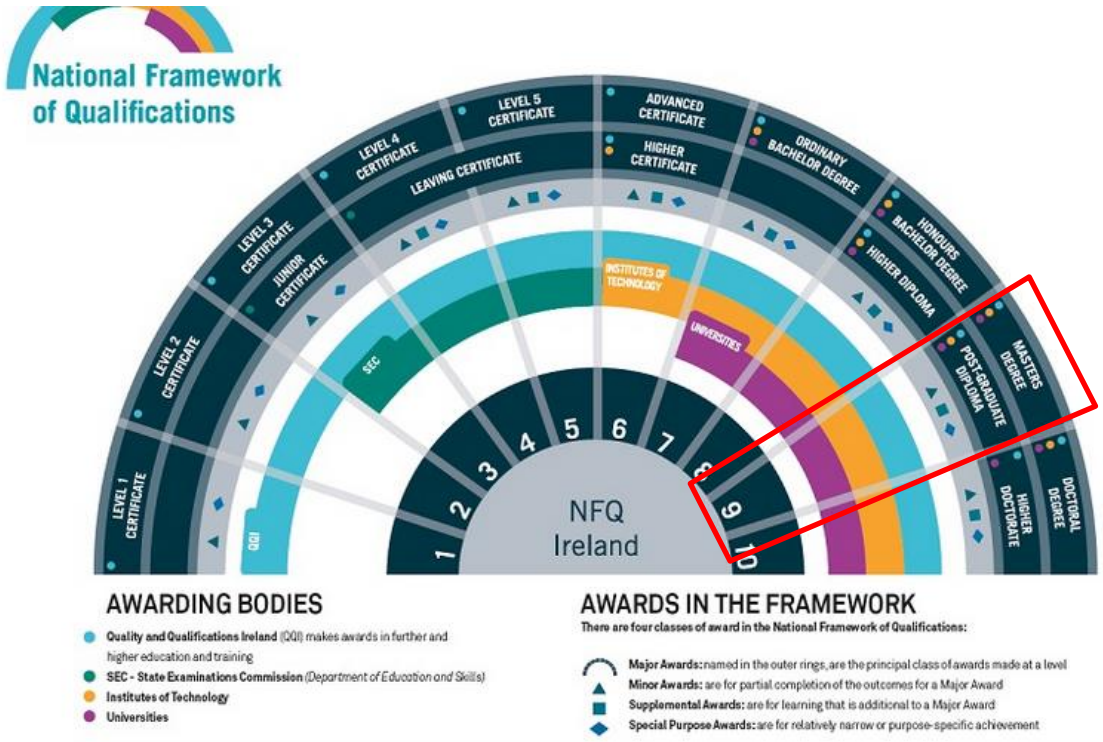
The programme is delivered by staff members in the UCD School of Agriculture and Food Science, UCD Institute of Food and Health and The UCD Innovation Academy. UCD is ranked in the top 10 European and top 25 International Universities in Food Science and Technology, based on research output.

The UCD Institute of Food and Health was established in 2008 and has an international reputation. The Institute brings together academic and research staff from across UCD in health-related aspects of food research, including food science, human and public health nutrition, food production, biosystems engineering, food law, consumer behaviour and food safety. The Institute aligns its research with national, international and industry agendas.

3.2 AWARDS AND QUALIFICATIONS

Master of Science, Graduate Diploma or Graduate Certificate **(NFQ Level 9)**

Degree Classification is outlined on the [National Framework of Qualifications]



The National Framework of Qualifications was established to create a coherent structure for the development and recognition of all awards within the Irish education system. It is founded on the principles of learning outcomes which identify the level of knowledge, skills and competence a learner should attain to achieve an award placed on the framework. It is a ten-level system (1–10) giving an academic or vocational value to qualifications obtained in

Ireland. Each level is based on nationally agreed standards of what a learner is expected to know and be able to do after receiving an award.

http://www.qqi.ie/Pages/Home.aspx

3.3 MODULES

Modules offered can be taken to build towards a Graduate Certificate, Graduate Diploma, or MSc in Food Nutrition and Health. Students may choose to study full time and complete their course in the minimum time allowed.

- 1 academic year (two semesters) year Graduate Certificate,
- 1.5 academic years (three semesters) Graduate Diploma),
- 2 academic years (four semesters) for MSc
- Maximum 4 years for all.

Alternatively, students may choose to follow the Module to Masters route; this allows the student to complete as few modules at a time as they choose, without any obligation to complete the full course. Through the Module to Masters approach students may, later, decide to work towards a qualification where relevant/qualifying modules will contribute to the final award. A student may sample a course by taking a single module before deciding whether to continue on to earn a qualification. By allowing students this flexibility, UCD Online opens up opportunities for those who have minimal free time in which to study, or are unsure if they want to commit to an entire course. In addition, the MSc in Food Nutrition and Health course offers exit qualifications at Graduate Certificate (30 ECTS); Graduate Diploma (60 ECTS) and MSc (90 ECTS).

When choosing which modules to register for during the registration period please study the Course Structure table (under section 5.0 below) which shows you core and optional modules offered, associated co and pre -requisites and the semester in which modules are offered.

DO NOT SELECT ANY MORE THAN 25 CREDITS PER SEMESTER. SELECT ONLY THOSE MODULES YOU WILL TAKE IN ANY GIVEN SEMESTER. THE MAXIMUM NUMBER OF MODULES YOU SHOULD TAKE IN YOUR FIRST SEMESTER IS 4 MODULES

3.4 ENTRY REQUIREMENTS

The MSc in Food Nutrition and Health is aimed at graduates from science-based disciplines with no previous formal educational background in Food Science or Nutrition who wish to up-skill and become competent in this increasingly important and rapidly evolving area.

Applicants must hold the equivalent of a lower Second Class Honours level 8 degree in a science, engineering or related discipline. Applicants with pass degrees and who also have substantial relevant work experience will be considered.
Applicants who do not meet the above requirements and who hold substantial relevant work experience will also be considered. All applications are assessed on a case by case basis.

Application is online; applicants are asked to provide a copy of academic transcripts, CV and a personal statement with their application.

If English is not your native language English Language requirements apply

3.5 USEFUL RESOURCES

Pain Free Biochemistry – An Essential Guide for the Health Sciences.
"Food Science and Technology" Edited by Geoffrey Campbell Platt published by Wiley Blackwell.
"Introduction to Human Nutrition" Second Edition edited by Michael Gibney, et al.

The Nutrition Society – you can join using your UCD student member; tick the box for the Irish Section.

3.6 LEARNING ENVIRONMENT, BLACKBOARD, IT REQUIREMENTS

Modules are delivered through the UCD Blackboard system
Guidelines on using the UCD Blackboard system are provided in the *UCD Online Getting Started Guide* given to students at the start of registration.
Useful information can also be found on the IT Services website at:
http://www.ucd.ie/itservices/itsupport/blackboarde-learning-topic/

3.7 REGISTRATION

Registering to modules:
At the beginning of each Semester you will be asked to complete your module registration. When choosing your modules please keep in mind any pre or co requisites. If you need assistance in deciding which modules to choose please speak to the Module Coordinator or Programme Coordinator.
If you need help in completing your registration please contact the Programme Office.
The maximum number of credits you can register to in a semester is 25 ECTS.
Information on Registration will be sent to you by email, and can also be accessed at:
http://www.ucd.ie/students/registration.html
Please ensure you check your UCD Connect email on a regular basis for updates relating to information on registration and relevant deadlines.
Term dates are available at: http://www.ucd.ie/students/keydates.htm

Withdrawing from modules
If you choose to withdraw from a Module please ensure you are aware of any possible implications.
Withdrawing from a module before end of *Week 6* of term will not result in financial or academic implications. If you need assistance with dropping modules from your registration please speak to the Programme Office.
Withdrawing from a module between Week 7 and Week 13 of the Semester will result in financial and academic implications. Please speak to the Programme Office for further information.
A student cannot withdraw from a module after Week Thirteen, according to UCD General Regulations.
It is very important that you keep the above dates in mind so that you are aware of any consequences for late withdrawal. Please ensure you contact the Programme office should you have any questions.

Withdrawing from the Programme
Should you choose to withdraw from the Programme you must ensure you complete and return the appropriate Withdrawal form. It is very important that you officially withdraw so that your registration record is updated accordingly. Failure to do so will impact on your record should you choose to return in the future to any programme in UCD.
http://www.ucd.ie/registry/academicsecretariat/wd.htm

3.8 EXAMINATION and ASSESSMENT

The MSc Food, Nutrition and Health is delivered and assessed online. Students do not need to attend campus for classes or assessment.
Modules will be assessed on a continuous basis over the course of the semester. All assessments will be online through UCD Blackboard, however if you are unable to complete an assessment in the indicated timeframe you must inform your Module Coordinator in advance.
Important information on Assessment can be found on the UCD Assessment webpage:
http://www.ucd.ie/registry/assessment/
UCD General Academic Regulations can be accessed online at:
http://www.ucd.ie/registry/academicsecretariat/regs.htm

A User's Guide to the General Regulations can be found at:
http://www.ucd.ie/registry/academicsecretariat/asug/
The User's Guide is a useful resource for matters relating to Modules and Credits, Assessment, Grading, Progression, Award Classifications.

Module Grade Scale
The module grade scale shows the letters grades that are available as final module grades. Where there are multiple assessment components, these grades represent the final aggregate result of all of the components.

MODULE GRADE SCALE		
GRADE	**GRADE-POINT**	**DESCRIPTION**
A+	4.2	Excellent
A	4	
A-	3.8	
B+	3.6	Very Good
B	3.4	
B-	3.2	
C+	3	Good
C	2.8	
C-	2.6	
D+	2.4	Acceptable
D	2.2	
D-	2	
E	1.6	Fail
F	1.0	Fail
G	0.4	Fail
NG	0	No grade (no work was submitted by the student

		or student was absent from the assessment, or work submitted did not merit a grade).

(General Regulation 4.4.1)

Repeating/Resitting Failed Exams:
http://www.ucd.ie/registry/academicsecretariat/asug/remediationoffailedmodules/
If you fail a module you will need to either resit or repeat it.

To *Resit* the assessment of a module, you take the resit assessment as determined by the Module Coordinator, it is to be completed by the end of the semester immediately following the original attempt.
None of the assessment from the previous attempt is carried forward. The resit assessment may be an end-of-semester examination or submitted coursework throughout the semester, or both. It does not have to be similar to the original assessment of the module.

To *Repeat* a module you repeat all coursework, assignments and assessments unless exempted. Normally, none of the assessment from the previous attempt is carried forward. A module is repeated in the semester the module is offered in, so for example if you fail a Semester 2 Module you would repeat when the module is again offered in Semester 2.

Please take note of the capping of repeat modules as outlined in the User's guide.
Fees also apply for module repeats/resits.

Plagiarism
UCD Plagiarism policy is outlined below:

http://www.ucd.ie/library/supporting_you/support_learning/plagiarism/

http://www.ucd.ie/registry/academicsecretariat/docs/plagiarism_po.pdf

The following is an extract from the document:

"The creation of knowledge and wider understanding in all academic disciplines depends on building from existing sources of knowledge. The University upholds the principle of academic integrity, whereby appropriate acknowledgement is given to the contributions of others in any work, through appropriate internal citations and references. Students should be aware that ***good referencing*** *is integral to the study of any subject and part of good academic practice.*

The University understands plagiarism to be the inclusion of another person's writings or ideas or works, in any formally presented work (including essays, theses, projects, laboratory reports, examinations, oral, poster or slide presentations) which form part of the assessment requirements for a module or programme of study, without due acknowledgement either wholly or in part of the original source of the material through appropriate citation. Plagiarism is a form of academic dishonesty, where ideas are presented falsely, either implicitly or explicitly, as being the original thought of the author's. The presentation of work, which contains the ideas, or work of others without appropriate attribution and citation, other than information that can be generally accepted to be common knowledge (Common knowledge refers to information, which is generally known and does not require to be formally cited in a written piece of work. Each subject area will have its own common knowledge) *is an act of plagiarism. It can include the following:*

1.1. Presenting work authored by a third party, including other students, friends, family, or work purchased through internet services;

1.2. Presenting work copied extensively with only minor textual changes from the internet, books, journals or any other source;

1.3. Improper paraphrasing, where a passage or idea is summarised without due acknowledgement of the original source;

1.4. Failing to include citation of all original sources;

1.5. Representing collaborative work as one's own;

Plagiarism is a serious academic offence. While plagiarism may be easy to commit unintentionally, it is defined by the act not the intention. All students are responsible for being familiar with the University's policy statement on plagiarism and are encouraged, if in doubt, to seek guidance from an academic member of staff. The University advocates a developmental approach to plagiarism and encourages students to adopt good academic practice by maintaining academic integrity in the presentation of all academic work".

3.9 EXTENUATING CIRCUMSTANCES

If your study or assessments are impacted due to unanticipated difficulties it may be necessary to submit an application for Extenuating Circumstances.
The Policy on Extenuating Circumstances can be found at:
http://www.ucd.ie/registry/academicsecretariat/extc.htm
Application is online through your SIS account. To complete an application you will need to submit supporting documentation to the Programme Office, either by post or email.
Application for Extenuating Circumstances for in-semester assessments must be made within 10 working days of the date of the assessment deadline.
Please contact staff in the Programme Office should you have queries in relation to the policy or application process.

4.0 FREQUENTLY ASKED QUESTIONS -FAQ's

How much time can I expect to spend studying a module?

For each 5 ECTS credit module earned students are expected to undertake about 125 hours of work, to include on-line activity and performing their own study. Students will be required to complete quizzes periodically so that we can monitor progress. Formative assessments will be used to help you develop and critically assess your own understanding of the material presented. All modules will have a high continuous assessment component.
http://www.ucd.ie/registry/academicsecretariat/asug/modulesandcredits/

What is an ECTS

ECTS refers to the European Credit Transfer System and provides a common currency for representing academic activity throughout Europe. It is used to facilitate student mobility and transferability of degrees and awards.
ECTS is linked to the Bologna Process and EU Tuning Project. Further details are available at http://www.eurireland.ie/programmes/bologna-process.128.html.

Can I take modules at any time?

Modules are delivered once per year, either in Semester 1 or Semester 2 as detailed on the module descriptor. Semester 1 commences in September and Semester 2 in January.
Term dates can be found at: http://www.ucd.ie/students/keydates.htm
No modules are delivered over the Summer Term.

Can I exit early from the Masters?

The Masters programme is 90 ECTS credits.
On successful completion of 30 credits you can opt to exit with a Graduate Certificate, and on completion of 60 credits you can opt to exit with a Graduate Diploma. All programmes are Level 9 under the National Framework of qualifications http://www.qqi.ie/
If you decide to exit from the Programme it is possible to return at a later stage and work toward a higher award, however there are time limits and restrictions as detailed in the Policy on Recognition of Prior Learning:
http://www.ucd.ie/registry/academicsecretariat/rpl.htm

How long do I have to complete the programme?

Programme:	**ECTS Credits**	**NFQ Level**	**Minimum Registration**	**Maximum Registration**
Masters	90	9	2 years	4 years
Graduate Diploma	60	9	1.5 years	4 years
Graduate Certificate	30	9	1 year	4 years

Students have 4 years in which to complete their programme from the date of first exam success.
This allows you flexibility in structuring your registration and the option to take time out during your programme should you need it.

What are my fees?
Fees are payable on a per credit basis so you can structure your fee payment schedule per semester based on the number of modules to which you are registered.
The 2015/16 per credit fee is Euro 87.80; therefore registration to a 5 credit module is Euro 439. Fees are payable at the beginning of each semester.
Fees are subject to annual increases.
Further details on Fees and how to pay can be found at:
http://www.ucd.ie/registry/adminservices/fees/index.html

Is there a maximum number credits I can register to in a given Semester?
The maximum number of credits you can register to in a semester is 25 ECTS.

Is there a minimum number of credits I can register to in a given Semester?
No, if you so wish you may decide to not register to any modules in a given semester. This will however impact on the duration of your programme registration.
If you wish to take time out you may also choose to apply for a Leave of Absence.
For further details please speak to the Programme Office.
Policy on Leave of Absence is available at:
http://www.ucd.ie/registry/academicsecretariat/loa.htm

Will I attend graduation and receive a UCD degree parchment?
All UCD students are invited to attend a conferring ceremony on campus upon successful completion of their degree course, regardless of whether they study on campus or through UCD Online. All students will be awarded a UCD parchment stating their qualification. The method of study (i.e. Online, face-to-face) is not stated on your parchment.

5.0 COURSE STRUCTURE

Grad Cert/Grad Dip/MSc Food Nutrition and Health						
Module Title	**Credits**	**Grad Cert**	**Grad Dip**	**MSc**	**Semester**	***Pre/Co Requisites**
FDSC 40530 Physiology and Metabolism	5	C*	C	C	1	None
HNUT40060 Introduction to Nutrition	5	C	C	C	1	None
FDSC 40500 Chemistry of Nutrients	5	C	C	C	1	None
IA 40310 Creativity and Innovation	5		C	C	2	None
FDSC 40520 Food Microbiology & Safety	5				1	None
HNUT 40070 Nutrients in the Life Cycle	5				2	HNUT40060 Intro to Nutrition (PR) FDSC 40500 Chemistry of Nutrients (PR) FDSC 40530 Physiology and Metabolism (PR)
HNUT 40080 Omic Strategies in Nutrition	5				2	HNUT40060 Intro to Nutrition (PR) HNUT 40070 Nutrients in the Life Cycle (PR)
FDSC 40510 Food Chemistry	5				2	None
FDSC 40540 Food Process Technology	5				2	FDSC 40500 Chemistry of Nutrients(PR) FDSC 40510 Food Chemistry(CR)
HNUT40150 Nutritional Assessment	5				2	HNUT40060 Intro to Nutrition (PR) FDSC 40500 Chemistry of Nutrients (PR) FDSC 40530 Physiology and Metabolism (PR)
FDSC 40550 Meat and Meat Products	5				2	FDSC 40500 Chemistry of Nutrients (PR)
HNUT 40110 Food Quality and Safety	5				2	None
FDSC 40570 Food Marketing	5				2	None
HNUT 40090 Pathways to Health	5				1	HNUT40060 Intro to Nutrition (PR) HNUT 40070 Nutrients in the Life Cycle (PR) FDSC 40530 Physiology and Metabolism (PR)
PHPS 40720 Public Health Nutrition	5				1	HNUT40060 Intro to Nutrition (PR) HNUT 40070 Nutrients in the Life Cycle (PR) FDSC 40530 Physiology and Metabolism (PR) HNUT 40090 Pathways to Health (CR)
HNUT 40100 Food Regulatory Affairs	5				1	None
FDSC 40590 Milk and Dairy Products	5				1	FDSC 40500 Chemistry of Nutrients (PR) FDSC 40510 Food Chemistry (PR) FDSC 40540 Food Process Technology (PR)
FDSC 40600 Principles of Sensory Science	5				2	None
PHPS40710 Promoting Consumer Nutrition	5				2	HNUT40060 Intro to Nutrition (PR) HNUT 40070 Nutrients in the Life Cycle(PR) FDSC 40530 Physiology and Metabolism(PR) HNUT 40090 Pathways to Health (PR) PHPS 40720 Public Health Nutrition (PR)
HNUT 40130 Research Design and Statistics	5	N/A	N/A	C	1	None
FDSC 40580 Project	10	N/A	N/A	C	2	HNUT 40130 Research Design and Statistics
						***CR = Co Requisite** **PR = Pre Requisite**

A Pre Requisite is a module which *must* be completed in *advance* of another module.
A Co Requisite can be taken in advance or concurrently with another module.
http://www.ucd.ie/registry/academicsecretariat/asug/modulesandcredits/

6.0 MODULE DESCRIPTORS

FDSC40530 Physiology & Metabolism

Credits:	**5 Credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Core**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Nigel Brunton**

Module Description:
The main aim of this module is to introduce students to how humans can extract energy from macronutrients (i.e. carbohydrates, fats, proteins). This will progress from the digestion, absorption and transport of macronutrients to converting them to a usable form of energy suitable to the functions of the body. Selected metabolic pathways will be covered, as will regulation mechanisms and interactions of the metabolic pathways.
The module will be delivered through the UCD Blackboard system and will consist of:

- Audio and demonstrations by the lecturers
- Online assessed multiple choice quizzes
- Discussion threads
- Computer aided laboratories

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures (audio) during the semester: 24 hours
- Discussion threads/synchronous chats/MCQs 24 hours
- Autonomous learning: 75 hours

How will I be assessed?
Assessment will take the form of written assignments, MCQ exams and analysis of experimental data sets.

Learning Outcomes:
On successful completion of this module student will be able to

- Explain how humans can extract, transform and utilise energy from their environment.
- Predict how humans react to various states of nutrition, which it may be subjected to over a period.
- Assess the role, mode of action and interaction of various hormones involved in nutrient metabolism.

HNUT40060 Introduction to Nutrition

Credits:	**5 credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Core**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Eileen Gibney**

Module Description:
This module is intended to provide an understanding of the role of food and nutrition in health. The topics covered will include: nutrient requirements and food-based dietary guidelines, the concepts of energy and nutrient balance; over- and under-nutrition and food choice. Students will be introduced to some of the evidence relating nutrients, diet and other lifestyle-related factors to health and chronic disease prevention
The module will be delivered through the UCD Blackboard system and will consist of:

- Audio/video/PPT lectures
- Written learning materials
- Live online classrooms

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures (audio) during the semester 20 hrs
- Discussion threads/synchronous chats/MCQs 25 hrs
- Autonomous learning 75hrs
- Exams

How will I be assessed?
The course will be assessed in number of ways including; online assessed multiple choice tests and Continuous Written Assessments.
The module grades will be split as follows:

- End of Semester Exam – 60%
- Worksheets / Case Studies / Written Assignments – 40%

Learning Outcomes:
On successful completion of this module you will:
Understand nutrient requirements in health and the scientific principles of food-based dietary guidelines.
Have comprehensive knowledge of core concepts of both energy and nutrient balance.
Be able to critically evaluate the evidence for some of the key factors which influence food and nutrient intake and the associated health consequences.

FDSC40500 Chemistry of Nutrients

Credits:	**5 Credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Core**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Jean Jacquier**

Module Description:
After a brief review of key concepts in chemistry, with a view to highlight the importance of water in all biochemical processes, this module is intended to equip students with an introduction to the key biologically important organic substances which are responsible for structure and function in living cells, namely, carbohydrates, lipids and proteins. The main aim of the module is to focus on the occurrence, chemical structures, physical and chemical properties of important members of each group in order to illustrate why cell structure and metabolism in plants and animals is dependent on these substances. The module will be delivered through the UCD Blackboard system and will consist of:

- Audio lectures and demonstrations
- Video laboratory demonstrations
- Online assessed multiple choice quizzes
- Asynchronous discussion threads.

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures during the semester: 20 hours
- Discussion threads/asynchronous chats 24 hours
- Autonomous learning: 75 hours
- Exams: 6Hrs

How will I be assessed?

- 3 short MCQ examination (30%)
- 5 virtual laboratory MCQ examinations (10%)
- End of semester MCQ examination (60%)

Learning Outcomes:
Describe the chemical and physical properties of key members of the three main classes of biomolecules. Illustrate how the distinctive properties of each class of biomolecule contribute unique features to structure and function in plant and animal systems. Demonstrate a practical ability to show that simple methods of chemical analysis can be used to distinguish between the different classes of biomolecules and to characterize individual members within a class.

IA40310 Creative Thinking and Innovation

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Core Graduate Diploma and MSc**
Pre/Co Requisites:	**None**
Module Coordinator:	**Mr. Troy Mc Connell / Dr. Colman Farrell**

Module Description

Whilst other modules will strengthen and deepen a student's discipline specific knowledge and understanding, this module will allow the student to develop new ways of thinking in creative and entrepreneurial ways. You will tackle a range of problems designed to foster creative thinking and an entrepreneurial mindset. You will have the opportunity to work in groups using online technology which will allow you to link up with fellow students unimpeded by the constraints of time and distance. This in turn, will help you to develop your project idea for the final part of your MSc.

The aim of this module is to help participants to access their innate ability for independent creative thinking and innovation in its broadest sense and to help them take an entrepreneurial approach to the development of their new ideas in a multidisciplinary team environment. This module encompasses three different areas of skill development and learning:

- Developing confidence in creative and entrepreneurial thinking. The objective is to introduce students to the inherent risk of failure in creative thinking and how to learn through prototyping and iteration. This will take place through a range of activity-based exercises.
- Evolution of innovative ideas in multidisciplinary teams introduces team working in a creative context. Here, openness to new ideas and passion for ideas presented come into creative conflict. We then focus on Design Thinking, where we have students do a design challenge, all the time learning practically the skills necessary for design thinking.
- How to translate ideas into value. We draw upon the Blank's Minimum Viable Product and Osterwalder's Value Proposition Canvas to work through prototyping, testing and development of ideas.

  The module will be delivered through the UCD Blackboard system and will consist of

  Audio and Video lectures and demonstrations.
  Team and individual challenges with specific learning outcomes.
  Asynchronous discussion threads.

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures during the semester: 10 hours
  Discussion threads/asynchronous chats: 50 hours
- Group and independent learning challenges: 25 hours
  Autonomous learning: 40 hours

How will I be assessed?

- 30% Continuous assessment (of contributions to online discussions)
- 30% Learning Journal
- 40% Final Project/Presentation

Learning Outcomes

On completion, participants should:

- Be able to generate innovative ideas and know how to approach their subsequent selection for further development.
- Have a working knowledge of the structures and theoretical tools that enable efficient team work, in order to convert ideas into value.
- Have the ability and confidence to recognise, cultivate and apply creative and entrepreneurial thinking in their own discipline and appreciate its value in other arena.
- Have an excitement for, and an appreciation of, innovation and entrepreneurship.
- Have developed a network of peers and identified potential mentors.

FDSC40520 Food Microbiology & Safety

Credits:	**5 Credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Amalia Scannell**

Module Description:
The course will address four key questions intrinsic to applied aspects of food microbiology:
- What microbes are important in food spoilage and foodborne disease?
- How are these microbes identified, differentiated, and enumerated?
- What are the important factors determining microbial growth in food?
- How can these factors be manipulated to ensure food quality and safety.

The module will be delivered through the UCD Blackboard system and will consist of:
- Online lecture material and recommended reading lists
- Audio demonstrations by the lecturers
- Asynchronous discussion threads

Students are expected to spend a total 110 hours workload during the semester consisting of:
- Lectures (audio) during the semester: 24 hours
- Discussion threads 10 hours
- Autonomous learning/ project research and writing 75 hours
- MCQ Exam: 1 hour

How will I be assessed?
Assessment will include continuous assessment an individual research project and an MCQ

Learning Outcomes:
On completion of this course the student should be able to:
- Propose methods to enumerate and differentiate different classes of Bacteria.
- Identify and describe the main pathogens and spoilage microorganisms associated with specific food types.
- Describe the basic principles of food spoilage and preservation
- Devise preservation / fermentation protocols using intrinsic and extrinsic food related factors.
- Discuss the application of microorganisms in food production.
- Critically review peer reviewed literature and integrate key concepts appropriately in his work.

HNUT40070 Nutrients in the Life Cycle

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: FDSC40500 Chemistry of Nutrients** **PR: FDSC40530 Physiology & Metabolism** **PR: HNUT40060 Intro to Nutrition**
Module Coordinator:	**Dr Aifric O'Sullivan**

Module Description:
This module provides an overview of nutrition during each life stage, commencing in utero, and continuing throughout the life cycle. It will discuss the biology of development, growth, maturation and aging and its impact on nutrition requirements, how to assess diet and nutrition status and how nutritional requirements can be achieved in the context of each major life stage. This module will encourage the student to critically analyse the beneficial and adverse outcomes of various nutrient intakes and dietary patterns on the nutritional status and well-being of humans during the life cycle.

The module will be delivered through the UCD Blackboard system and will consist of:
- Audio and demonstrations by the lecturers
- Online assessed multiple choice quizzes
- Virtual classroom environments
- Independent reading
- Written assignments

Students are expected to spend a total 125 hours workload during the semester consisting of:
- Lectures and activities during the semester: 25 hours
- Discussion threads/MCQs 25 hours
- Autonomous learning: 75 hours

How will I be assessed?
- Mid Semester Assignment/Examination (30%)
- End Semester Assignment/Examination (70%)

Learning Outcomes:
On successful completion of this module the student will be able to
- Understand critical nutritional factors that contribute to healthy growth, development and functional capacity throughout life.
- Describe the nutritional requirements of women before and during pregnancy and lactation, infants, children, adolescents, adults and older adults.
- Assess and evaluate nutritional status at different life stages.
- Critique and justify nutritional solutions targeted at different life stages to promote, improve or maintain health.

HNUT40080 Omic Strategies in Nutrition

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: HNUT40060 Intro to Nutrition** **PR: HNUT40070 Nutrients in the Life Cycle**
Module Coordinator:	**Professor Lorraine Brennan**

Module Description:
This module will equip students with the knowledge of current research methods in nutrition research. The module will deal with the structuring, planning and ethics involved in conducting human nutrition research. Additionally the students will cover nutrigenomics including the basics of nutrigenomics and applications in nutrition research. (Nutrigenomics is a rapidly emerging multidisciplinary sciences, which aim to explore the effects of nutrients on the genome, proteome and metabolome, and to elucidate the effect of genetic variation on the interaction between diet and disease).
The module will be delivered through the UCD Blackboard system and will consist of:

- Audio lectures and demonstrations by the lecturers
- Online assessed multiple choice quizzes
- Virtual classroom environments
- Written assignments

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures and course material: 18-24 hours
- Discussion threads/synchronous chats/MCQs 24 hours
- Autonomous learning/Assignments: 75 hours

- **How will I be assessed?**
- MCQ examination (15%)
- Essay/written assignment (85%)

Learning Outcomes:
On successful completion of this module student will be able to

- Understand the design and implementation of human nutrition studies;
- Understand the principles of nutrigenomics;
- Understand the principles of nutrigenetics;
- Explain the uses of nutrigenomics and be capable of reading current literature.

FDSC40510 Food Chemistry

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Niamh Harbourne**

Module Description:
This module focuses on food proteins, carbohydrates and lipids with emphasis on relationships between their structure and functional properties in their modified and unmodified states. The module emphasises how processing, storage, cooking, enzymatic treatment and use of additives alters the molecular interactions and functionality of these food components. The role of water in foods and its influence on food stability is examined.
The module will be delivered through the UCD Blackboard system and will consist of:

- Lectures demonstrations by the lecturers
- Online assessed multiple choice quizzes
- Virtual classroom environments
- Asynchronous discussion threads
- Synchronous chat

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures during the semester: 26 hours
- Discussion threads/synchronous chats/MCQs/Assignments: 24 hours
- Autonomous learning: 75 hours

How will I be assessed?
A combination of MCQs and assignments will be used.

Learning Outcomes:
On successful completion of this module student will be able to

- Compare and contrast the structure and functions of specific food protein systems and explain the intrinsic and extrinsic factors influencing the functions of these proteins.
- Differentiate lipids on the basis of their fatty acid profile and discuss their physical properties and chemical deterioration
- Describe the functions and food applications of selected monosaccharides, disaccharides and polysaccharides.
- Explain the state of water in foods and examine its influence on food stability.

FDSC40540 Food Process Technology

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: FDSC40500 Chemistry of Nutrients** **CR: FDSC40510 Food Chemistry**
Module Coordinator:	**Professor James Lyng**

Module Description:
This module will give students foundation knowledge of key physical operations used in the preservation of foods. The course will underpin other commodity-based modules in the online programme which largely focus on chemical aspects of food products and their processing. The course will be delivered online and examines the theory behind and equipment used in conventional (e.g. heat processing, freezing, dehydration) and alternative (e.g. electro heating and other emerging methods) physical food preservation methods.
The module will be delivered through the UCD Blackboard system and will consist of:

- Audio/Video lectures and demonstrations by the lecturers
- Online assessed short answer/multiple choice quizzes
- Virtual classroom environments
- Asynchronous discussion threads
- Synchronous chat

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures (audio/video) during the semester: 24 hours
- Online Tutuorials/MCQs 24 hours
- Autonomous learning: 75 hours
- Exams: (60%): 2 hours

How will I be assessed?

- 4 x online MCQ/short answer examinations (5% each) - Total 20%
- 6 x online calculation problem sets (3.33% each) - Total 20%)
- 1 x online end of semester examination (60%) - See Note below re Invigilation

Invigilation on the final examination: As an alternative to travelling to an invigilation centre to complete this examination, an arrangement has been made between UCD and an independent online invigilation service called Remote Proctor NOW. The charge for this service, payable by students directly to Remote Proctor NOW, is approx $15. Students who don't have a webcam and microphone should borrow one for the duration of this examination. Further details will be provided during the module.

Learning Outcomes:
On successful completion of this module student will be able to

- describe the principles behind heatprocessing, freezing and dehydration operations
- describe the principle of operation of a range of equipment for each unit operation
- apply knowledge to select the most suitable equipment for specific products or situations
- compare and contrast various items of equipment suitable for processing specific products
- calculate the correct answer and units following relatively complex mathematical calculations representative of those which they might be required to perform in an industrial environment

HNUT40150 Nutritional Assessment

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**HNUT40060 Intro to Nutrition** **FDSC 40500 Chemistry of Nutrients** **FDSC 40530 Physiology and Metabolism**
Module Coordinator:	**Dr Eileen Gibney**

Module Description

This module is intended to provide an understanding of the concepts and techniques of nutritional assessment and how they are applied in population health and research. It will cover topics such as dietary intake assessment methodology, body composition techniques and the role of biochemistry in nutritional assessment. Students will be given both the theoretical background and practical application of such techniques with relation to human nutrition research and assessment.

How will I study?

The module will be delivered through the UCD Blackboard system and will consist of:

- Audio/video/PPT lectures
- Written learning materials
- Live online classrooms

Expected Commitment

Students are not required to attend lectures at the UCD campus as part of the course.
Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures (audio) during the semester:
- Discussion threads/synchronous chats
- Autonomous learning
- Exams

How will I be assessed?

The course will be assessed in number of ways including; written exams and practical reports

Learning Outcomes
On successful completion of this module I will be able to

- Understand techniques used in nutritional assessment, including dietary intake, body composition and biochemical analysis.
- Have knowledge of their use in nutrition research and public health policies.

FDSC40550 Meat and Meat Products

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: FDSC40500 Chemistry of Nutrients** **CR: FDSC40510 Food Chemistry**
Module Coordinator:	**Professor Frank Monahan**

Module Description:
This module is intended to equip students with knowledge of meat chemistry and the technology associated with the handling and processing of meat. The module will cover the structure and composition of muscle and adipose tissue, the principal constituents of meat. The biochemical changes that accompany the post-slaughter conversion of muscle to meat will be explored. The chemistry of meat colour, texture and flavour will be studied and the impact of pre-slaughter (diet, production system) and post-slaughter (ageing, environment) factors on these sensory attributes of meat will be evaluated. The chemistry and technology underlying the manufacture of processed meats will be studied.
The module will be delivered through the UCD Blackboard system and will consist of:
- Audio and demonstrations by the lecturers
- Online assessed multiple choice quizzes
- Virtual classroom environments
- Asynchronous discussion threads
- Synchronous chat

Students are expected to spend a total 125 hours workload during the semester consisting of:
- Lectures (audio) during the semester: 24 hours
- Discussion threads/synchronous chats/MCQs 24 hours
- Autonomous learning: 75 hours
- Exams: (40%): 2 hours

How will I be assessed?
- MCQ examination (10%)
- MCQ examination (10%)
- End of semester examination (80%)

Learning Outcomes:
On successful completion of this module student will be able to
- Describe the structure and composition of muscle and adipose tissue;
- Explain the biochemical changes that accompany the conversion of muscle to meat;
- Identify which meat components contribute to the sensory (colour, flavour, texture) quality of meat and explain the factors (pre- and post-slaughter) which contribute to the variation in each sensory attribute;
- Integrate their knowledge of muscle and adipose tissue structure and composition into meat product manufacture and formulation;
- Explain the processing steps involved the role of non-meat ingredients in the production of different processed meats products.

HNUT40110 Food Quality and Safety

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Aideen McKevitt**

Module Description:
Food quality is the quality characteristics of food that is acceptable to consumers and is an essential food manufacturing requirement. Food quality covers the safety of the food processing environment; manufacturing and processing standards e.g. dietary, nutritional or medical. This module will include origin and ethical food production, food safety and safe food processing, food quality management GMP and GHP, risk analysis, and the role of HACCP in the risk analysis process, other aspects of food quality including genetically modified foods, and food quality assurance schemes will also be covered. The quality debate at EU level will be addressed.
The module will be delivered through the UCD Blackboard system and will consist of:

- Online lectures, videos and audio presentations
- Asynchronous and synchronous discussion
- Autonomous learning
- Written Assignments

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Online Lecture sets 24h
- Asynchronous and synchronous discussion 6h
- Autonomous learning 65h
- Written assignments 30h

How will I be assessed?
Continuous assessment 100% consisting of two critical reviews 50%

Learning Outcomes:
On successful completion of this module student will be able to

- Discuss the core components of food quality
- Analyse data sets relevant to food quality issues
- Source and evaluate key literature as it relates to food quality
- Critically evaluate conflicting views related to food quality issues
- Communicate food quality issues to lay and expert audience
- Critically analyse case studies as they relate of food quality issues

FDSC40570 Food Marketing

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Chenguang Li**

Module Description:
Marketing is the science and art of exploring, creating, and delivering value to satisfy the needs of a target market at a profit. Marketing identifies unfulfilled needs and desires. It defines measures and quantifies the size of the identified market and the profit potential. It pinpoints which segments the company is capable of serving best and it designs and promotes the appropriate products and services. Today's marketing is all about creating customer value and building profitable long-term and mutually beneficial relationships in socially responsible ways between an organization and the public it serves. The essence of successful marketing is to combine a detailed understanding of market needs and dynamics with appropriate product/services offerings and effective communication strategy. This course will focus on the major decisions that marketing executives and top management face in their efforts to harmonize the objectives and resources of the organization with the needs and opportunities in the market place, with a particular emphasis on the food industry and the challenges faced by the food marketing executive.

The module will be delivered through the UCD Blackboard system and will consist of:
- Lectures, and audio and demonstrations
- Virtual classroom environments
- Group collaborative work
- Written assignments

Students are expected to spend a total 125 hours workload during the semester consisting of:
- Lectures and course material: 24 hours
- Discussion threads/synchronous chats/group work 26 hour
- Autonomous learning: 75 hours

How will I be assessed?
Students will work on group and/or individual projects and marketing case studies, and generate marketing reports.

Learning Outcomes:
On successful completion of the module students are expected to have a better understanding of the nature and role of marketing, the marketing process, the marketplace and customer needs, the marketing-mix decisions, etc., and being able to apply the marketing concepts to evaluate the effectiveness of marketing strategies utilized by food companies in the market places.

HNUT40090 Pathways to Health

Credits:	**5 Credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: FDSC40530 Physiology & Metabolism** **PR: HNUT40060 Intro to Nutrition** **PR: HNUT40070 Nutrients in the Life Cycle**
Module Coordinator:	**Dr Breige McNulty**

Module Description:
This module will focus on key nutrients (e.g. fat, carbohydrates, protein, target vitamins/minerals) and their role in health. For each nutrient, consideration will be given to i) forms and quantities consumed in the diet, ii) physiological role in health and disease, iii) current health and lifestyle advice in relation to the role of this nutrient in health and disease and iv) the implications of newly emerging scientific evidence.
The module will be delivered through the UCD Blackboard System. It will consist of:

- Audio and demonstrations by the lecturers
- Discussion threads
- Virtual classroom environments
- Written assignments

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures and activities during the semester: 18-24 hours
- Autonomous learning: 65-75 hours
- Assignment work: 40 hours

How will I be assessed?
Two written assessments of 50% each

Learning Outcomes:
On successful completion student will be able to

- Describe the quantity and quality of key nutrients consumed in the diet
- Critically evaluate how these nutrients influence health and disease
- Critique current health and lifestyle advice in relation to the role of these nutrients in health and disease.
- Critically evaluate the evolving science base surrounding these nutrients.

PHPS40720 Public Health Nutrition

Credits:	**5 credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: FDSC40530.Physiology & Metabolism** **PR: HNUT40060 Intro to Nutrition** **PR: HNUT40070 Nutrients in the Life Cycle** **CR: HNUT40090 Pathways to Health**
Module Coordinator:	**Dr Celine Murrin**

Module Description:
Public Health Nutrition builds on a foundation of nutritional science and applies the principles of epidemiology to measuring and describing health, food and nutritional problems. This module will give you a basic understanding of the core concepts of epidemiology and provide you with the skills to analyse current nutrition research and to evaluate nutrition programmes for improving public health. Approaches to promote health and prevent adverse health outcomes will be considered in view of nutrient recommendations and food based dietary guidelines for optimal health and nutrition. The development of interventions and role of policies will be explored to understand how they can impact nutritional status and population health and wellbeing.

The module will be delivered through the UCD Blackboard system and will consist of:
- Online lectures
- Online discussion groups
- Independent reading
- Written assessment

How will I be assessed?
Written assignment 50%
MCQ Core concepts WEEK3 10%
Concept map 40%

Learning Outcomes:
On successful completion student will be able to:
- Understand the basic concepts and principles which underpin nutritional epidemiology and determinants of ill health.
- Demonstrate the ability to critically evaluate current findings from population studies on the role of diet and chronic disease.
- Understand and evaluate the evidence for effective public health interventions for key population groups.
- Understand the process of developing interventions and policies.
- Critically reflect on the impact of policies at a national and global level.

HNUT40100 Food Regulatory Affairs

Credits:	**5 Credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Aideen McKevitt**

Module Description:
Food Regulatory Affairs is an interdisciplinary subject that integrates science, law and policy as they apply to the regulation of the food chain from farm to fork. In this module you will study the role of European Union (EU) institutions in the development of food regulation, the evolution of the EU approach to food regulation from the early days of "recipe law" and mutual recognition, to the present focus on consumer protection. The role of international organisations with a food regulatory remit will be studied including Codex, WHO, WTO FAO. The development of a risk based approach to food safety underpinned by science, and current regulatory issues e.g. food fraud and adulteration, food additives and contaminants, legislation on food information for consumers, nutrition and health claims, and food hygiene will be explored.
The module will be delivered through the UCD Blackboard system and will consist of:
- Online lectures, videos and audio presentations
- Asynchronous and synchronous discussion
- Autonomous learning
- Written Assignments
- Case Studies

Students are expected to spend a total 125 hours workload during the semester consisting of:
- Online Lecture sets 24h
- Asynchronous and synchronous discussion 6h
- Autonomous learning 65h
- Written assignments 30h

How will I be assessed?
Continuous assessment 100% consisting of two critical reviews one of which may take the form of a PowerPoint Presentation

Learning Outcomes:
On successful completion of this module student will be able to
- Critically review evolution of EU food regulatory policy
- Interlink and co-ordinate knowledge regarding roles and activities of key stakeholders – producers, processors, regulators, consumers
- Apply knowledge about food legislation to answer a range of regulatory affairs questions from the perspective of the range of food sector stakeholders
- Analyze the vertical and horizontal regulatory elements that make up farm to fork regulation
- Interpret published scientific data in the area of food regulatory affairs
- Critically analyse literature and scientific data as it relates to FRA
- Communicate with various stakeholder sectors
- Explore and evaluate alternative positions and devise strategies for appropriate implementation

FDSC40590 Milk and Dairy Products

Credits:	5 Credits
Start Date:	Semester 1
Duration:	12 weeks
Core/Optional:	Optional
Pre/Co Requisites:	PR: FDSC40500 Chemistry of Nutrients PR: FDSC40510 Food Chemistry PR: FDSC40540 Food Process Technology
Module Coordinator:	Mr Michael O'Sullivan

Module Description:
This course is designed to provide students with the knowledge skills required to function in the dairy sector. The course is divided into two sections the first deals, in detail, with the chemistry of milk constituents, in particular their interactions during storage and processing. The second section focuses on the flexibility of milk as a raw material for processing, covering the production of selected products of the Irish and international dairy industry with special emphasis on the impact of raw material and processing on final product quality.

The module will be delivered through the UCD Blackboard system and will consist of a blend of on-line lectures during the semester and autonomous learning.

Students are expected to spend a total 125 hours workload during the semester:
Lectures 30 hrs
Specified Learning Activities 20 hrs
Autonomous Student Learning 70 hrs

How will I be assessed?
Assessment will be by a combination of periodic short on-line MCQs, a written assignment and a terminal examination.

Learning Outcomes:
On successful completion of this module student will be able to
- Describe in detail the chemistry of the milk system.
- Analyse the interactions of the various milk constituents during processing and storage.
- Describe the production of the major dairy products.
- Evaluate the impact of important factors, such as variation in raw material composition or variation in processing parameters, on final dairy product quality.

FDSC40600 Principles of Sensory Science

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Amalia Scannell**

Module Description:
This module is a postgraduate course designed to give students essential tools to understand and use the key principles of sensory science in food related research. The module will focus on techniques used in industrial sensory evaluation. In particular, sensory principles will include aspects of panellist evaluation; requirements of test area equipment and facilities; analytical and subjective tests including difference testing, methods for consumer testing and statistical approaches. The National Standards Authority of Ireland (NSAI) Database provides direct access to up to ISO standards for sensory testing. This can be accessed through the Library at http://eu.i2.saiglobal.com/management/
The two key mandatory text books are
1. Food oral processing [electronic resource]: fundamentals of eating and sensory perception / edited by Jianshe Chen, Lina Engelen
2. Sensory evaluation [electronic resource] : a practical handbook by/ Sarah E. Kemp, Tracey Hollowood, Joanne Hort.
The module will be delivered through the UCD Blackboard system and will consist of:
- Electronic lectures and notes
- Online Blogs
- Written assignments

Students are expected to spend a total 125 hours workload during the semester consisting of:
- Lectures and course material: 48 hours
- Discussion threads/Asynchronous chats 2-4 hours
- Autonomous learning: 68 hours

How will I be assessed?
The continuous assessment strategy seeks to develop scientific writing and report writing skills in addition to discipline knowledge, critical thinking and problem solving skills. Assessments will be scheduled at times which vary over the semester and will be submitted remotely through Blackboard.
The assessment elements may include:
- Short study assignments to ensure students are engaging with course material (30%)
- Statistical data handling assignment (20%)
- Main project (30%) This is a multi-step project which includes essay writing and presentation delivery and video making elements.
- Proctored exam (20%)

Learning Outcomes:
On successful completion of this module student will be able to
- Discuss how the human sense organs function
- Distinguish between different sensory testing procedures.
- Resource and critically review relevant peer reviewed journal articles

• Plan a taste panel complying with International Organisation for Standardisation (ISO standards). • Analyse a typical difference test dataset and prepare a sensory report explaining the consequences of the result in the context of a given sensory scenario.
• Evaluate a given product scenario, and select appropriate sensory testing and statistical analysis, making choices based on reasoned argument using information derived throughout the module
• Synthesise a structured report documenting test procedures, results analysis and conclusions, and disseminate key findings to a defined audience in a media chosen by the student.

PHPS40710 Promoting Consumer Nutrition

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Optional**
Pre/Co Requisites:	**PR: FDSC40530 Physiology & Metabolism** **PR: HNUT40060 Intro to Nutrition** **PR: HNUT40070 Nutrients in the Life Cycle** **PR: HNUT40090 Pathways to Health** **PR: PHPS40720 Public Health Nutrition**
Module Coordinator:	**Dr Celine Murrin**

Module Description:
This module will give you a basic understanding of the theory and practice that is essential to the effective promotion of nutrition and health messages. The module will consider the key factors that determine consumer food choice and will focus on psycho-social behaviour theories to understand concept of changing health and health behaviour. These concepts will provide a framework for effective nutrition communication strategies. Contextual approaches will be examined in addition to designing and employing media channels and resources that are appropriate for the target population.
The module will be delivered through the UCD Blackboard system and will consist of:

- Short lectures
- Online discussion groups
- Independent reading
- Written assessment

Students are expected to spend a total 122 hours workload during the semester consisting of:

- Lectures during the semester: 12 hours
- Discussion threads 10 hours
- Written assessment 40 hours
- Autonomous learning: 60 hours

How will I be assessed?

- 4 Written assignments 100%

Learning Outcomes:
On successful completion of this module student will be able to:
- Understand the frameworks and theories for managing change at individual, community, population and organisational levels of working.
- Understand the principles and methods of partnership and collaborative working to improve health and wellbeing.
- Understand the organisation and planning of programmes and services and their evaluation.
- Apply programme management skills to address complex health issues.
- Critically analyse the role of the community in the development of nutrition interventions and programmes.
- Communicate effectively using a range of communication methods and showing sensitivity to the specific needs of the potential audience.

HNUT40130 Research Design and Statistics

Credits:	**5 Credits**
Start Date:	**Semester 1**
Duration:	**12 weeks**
Core/Optional:	**Core for MSc**
Pre/Co Requisites:	**None**
Module Coordinator:	**Dr Aideen McKevitt**

Module Description:
Well planned research forms the basis for increasing knowledge in food, nutrition and health and an understanding of research design and statistics is essential to complete a research project. Fundamentals include the ability critically assess previously published work, an understanding of the application and limitations of statistical techniques, and the competence to prepare, an innovative preliminary research proposal.
The aim of this module is

- To develop understanding of project design, data management and statistical analysis.
- To present a scientific argument based on the statistical analysis of numerical data.
- To develop the ability to undertake independent scientific analysis, based on critical analysis of published research;

The module will be delivered through the UCD Blackboard system and will consist of:

- Lectures and audio presentations
- Online assessed statistical problems
- Use of statistical software packages
- Asynchronous discussion threads
- Synchronous webchats

Students are expected to spend a total 125 hours workload during the semester consisting of:

- Lectures during the semester: 24 hours
- Discussion threads/synchronous chats/ Assignments 26
- Autonomous learning 75h

How will I be assessed?
Statistical assignments and a research proposal outline document.
This module is core for those who intend to take module FDSC40580 Research Project.

Learning Outcomes:
On successful completion of this module student will be able to

- Identify and utilise advanced academic knowledge within food science and nutrition to develop a valid proposal for a food science /nutrition research project.
- Understand the basic principles underlying statistical tests and statistical significance.
- Identify and apply appropriate statistical techniques to data sets.
- Design a valid innovative research proposal or business proposition.
- Utilise statistical software to perform analysis.
- Perform on-line literature searches to extract relevant scientific information from the resulting publications

FDSC40580 Project Module

Credits:	**5 Credits**
Start Date:	**Semester 2**
Duration:	**12 weeks**
Core/Optional:	**Core for MSc**
Pre/Co Requisites:	**PR: HNUT40130 Research Design and Statistics**
Module Coordinator:	**Dr Aideen McKevitt**

Module Description:
This module represents the integration of all previous modules studied during the course. In the module HNUT 40130 Research Design and Statistics you chose a project of suitable scope for research and prepared a brief outline research proposal.
This module will introduce students to the research process and will build on the foundations of investigation and scholarship established during earlier modules.
1. You will use your experience from the taught modules to carry out and deliver a systematic critical review of the literature in your chosen research topic.
2. You will plan and develop a full research grant proposal on your chosen topic for submission to a potential funding agency to include background, aims and objectives, a justification of the research approach and methods to be used, ethical issues and research governance, plans for data collection and analysis, deliverables, proposed time frame for the project, budget, expected impact and dissemination of research results.

The module will be delivered through the UCD Blackboard system and will consist of:
- Online supervision by academic staff and tutors
- Discussion threads
- Web Chats
- Individual instruction with tutors

Students are expected to spend a total 250 hours workload during the semester consisting of the literature review (100 hours); and the research proposal – planning, development and write up (150 hours)

How will I be assessed?
- Literature review 40%
- Research Project Proposal 60%

Learning Outcomes:
On successful completion of this module student will be able to
- Plan and develop a proposal for a research investigation using the most appropriate methods of inquiry
- Draw on expertise to study scientific literature.
- Produce an appropriate detailed research strategy to fulfil project objectives.
- Critically analyse existing findings in the scientific literature.
- Formulate complex scientific arguments.
- Identify appropriate scientific content from publications
- Edit, structure and present given information, avoiding plagiarism.
- Apply project management techniques in project design to achieve a defined goal.

- Communicate in a clear, concise manner by means of a formal written report following accepted scientific convention