University of Bahrain
College of Science
Department of Biology

Master of Science Degree in Nutrition and Dietetics

2015-2016

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MSc Nutrition Program Booklet

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1.1 Message from the Dean of the College of Science

It gives me a great pleasure to launch the bulletin of the Master Program in Nutrition and Dietetics. This newly established academic program, which is offered and administered by the Department of Biology, has come in response to two major developments. Firstly, to keep up with the strategic aspirations of the University of Bahrain and its relentless pursuit to develop its academic programs, particularly with regard to graduate studies, and secondly, in response to the needs of the Bahraini society, which is witnessing rapid developments in the patterns of the lifestyle and the level of attention paid to the personal aspects of health.

Strenuous efforts made by the specialized faculty members at the University of Bahrain over the past years have resulted in the establishment of this thoughtful academic program which fills an urgent need not only at the local level, but also at a regional level. It was our goal to attract candidates from all the GCC countries who are interested in completing their higher academic study. This has been a goal that we endeavored to achieve.

Due to its applied and dynamic nature, the M.Sc. program in Nutrition and Dietetics is expected to serve the Gulf communities through the provision of specialized personnel that can scientifically address the current related issues and problems in nutrition and contribute in providing appropriate solutions and recommendations.
Finally, I can only extend my sincere thanks to all those who work to make this academic program materialized, hoping that the program will achieve its objectives and wishing all the success to those who run and support it.

1.2 Message from the Head of the Department of Biology

The Department of Biology has developed a Master Program in Nutrition and Dietetics in order to contribute to health promotion and disease prevention in the Kingdom of Bahrain and other neighboring GCC countries. Nowadays, chronic and diet related diseases such as cardiovascular disease, diabetes, obesity and cancer are considered as the major death causes in the world including the Arab Gulf Region. These diseases can be prevented by following a proper diet and healthy life style. Therefore, the need for specialists in nutrition and dietetics has become one of the fundamental specializations required in order to prevent and control diet related diseases and therefore ensure and enhance the existing of healthy societies and nations.

The Master Program in Nutrition and Dietetics aims to provide a high level of education in the field of Nutrition and Dietetics through well-designed courses, internship, and research projects that tackles the main nutritional health associated problems in the kingdom of Bahrain. It will provide its graduates with knowledge and skills in all aspects of human nutrition including food science, nutritional science, dietary assessment, research methodology, therapeutic nutrition, public health, community nutrition and food service management.

Graduates from this program will be prepared to enter a wide range of careers in the work market within local or regional institutions such as nutritionists in both public and private health organizations, dietitians in health centers, nutrition specialists in public relations and media, nutrition educators in healthcare, community and health care programs, researchers, personal trainers, and public health planners. Graduates of this program may also proceed to achieve a Ph.D. degree in many related fields.

1.3 Program Administration Committees

Department Graduate Committee

Dr. Abdul Ameer Allaith	Head
Professor Jameel Alkhuzai	Member
Professor Qaher Mandeel	Member
Dr. Afnan Freije	Member

Program Executive Team

Dr. Abdul Ameer Allaith	Head
Dr. Tariq Alalwan	Member
Mrs. Ebtisam Buti	Member

2. Program Details

2.1 Preface

The Master Program in Nutrition and Dietetics is an inter-disciplinary program offered and managed by the Department of Biology at the College of Science. It involves faculty from the Departments of Biology, Chemistry and Mathematics, as well as specialists from other institutions. Program courses are generally taught by multiple instructors. The program offers graduate study leading to the M.Sc. degree in Nutrition and Dietetics. The M.Sc. program requires the completion of 33 credit hours of graduate courses and a research project (thesis), and a practical training in dietetics (8 weeks) in a recognized institution.

2.2 Program Mission

The M.Sc. Program in Nutrition and Dietetics at the University of Bahrain (UOB) provides a graduate-level proficiency in nutrition and dietetics through education and research, and the mentoring of future specialists.

2.2 Program Aims and Objectives

The program aims to provide students with a knowledge and skill base in fundamental and advanced nutrition and dietetics. Specifically the program aims to:

- provide the student with a core body of instruction/knowledge in nutrition and dietetics;
- provide the student with a knowledge and understanding of human nutrition beyond that offered at the undergraduate level;
- create a learning environment that is informed by the academic/ research background and professional experience of the staff;
- provide a firm foundation in research skills and techniques;
- enable the student to utilize research methodologies to advance knowledge by creating and testing hypotheses through original or library based research;
- develop verbal and written communication skills;
- enable the student to assimilate and communicate findings of scientific research;
- enable the student to enter a broad range of professions, fields

and careers, including research, nutrition, food industry and food systems, and the business of health clubs and health promotion;
- enable the student to offer science-based opinions on nutrition issues

2.3 Program Intended Learning Outcomes (PILOs)

Upon successful completion of the program, graduates will be able to:

1. Implement advanced knowledge in areas of nutrition and dietetics.
2. Develop ideas in addressing and solving problems.
3. Analyze nutritional problems and communicate the results.
4. Evaluate specific knowledge and current research in nutrition and dietetics.
5. Plan an original research in nutrition and dietetics.
6. Demonstrate effective communication skills.
7. Integrate intellectual, cognitive and transferable skills in the field of nutrition and dietetics.
8. Develop independence and autonomy in life-long learning

2.4 Target groups

This program is designed for students with an undergraduate degree in any of the followings areas: Nutrition, Biology, Chemistry, Food Science and Technology, Health Sciences, Health Education, Bio-health, and Life sciences.

2.5 Opportunities

Graduates with the M.Sc. in Nutrition and Dietetics will be competent to join the health services and other related services in their respective countries. They may manage small departments of nutrition. Graduates will also be able to plan, administer and supervise intervention programs and develop and execute nutritional surveys and surveillance programs. Distinguished students may pursue further doctorate studies in nutrition for research and academic careers or take higher positions as policy makers in Nutrition.

Possible careers for successful students of the M.Sc. in Nutrition and Dietetics include:

- Nutritionists in government and private sectors and at regional and international levels
- Technical nutrition advisors in private or public health practices.
- Nutrition/ food journalist or other fields within the media (nutrition publishing and public relations).
- Food and health product sales.
- Teaching and education (as a lecturer of nutrition and related subjects).
- Research into nutrition and food.
- Health promotion within an existing practice (health and fitness clubs).
- Food service establishments (hotels, restaurants, etc ....).
- Food industries (counseling, research, quality control, etc ....).
- Community food service management and nursing homes, prisons, and other public institutions.
- Clinical dietitian in hospitals and government agencies.

2.6 Admission Requirements

In order to be accepted as a postgraduate student in the M.Sc. Program in Nutrition and Dietetics, the applicant must meet the UOB admission requirements including:

1. The applicant should have a B.Sc. from the UOB or any recognized institution with a minimum grade point average of 2.67 (on a 4.0 scale or equivalent). Preference is given to students having a B.Sc. degree in nutrition, chemistry, biology, food science, animal science or related fields. Applicants with a B.Sc. in closely related subjects may be admitted to the program.

2. The applicant must pass the written qualifying examination.

3. The applicant must have an English proficiency certificate: i.e. TOEFL paper-based (PBT) score of 500, or internet-based score (IBT) of 61, computer-based (CBT) of 173, or IELTS of 6.

4. The applicant must pass the personal interview with the Departmental Postgraduate Committee.

2.7 Description of the Program structure

The program leading to a Master in Science degree in Nutrition and Dietetics is designed and delivered in study blocks of two to three days duration to facilitate attendance by students in employment, or students who are not resident in Bahrain. It is based on student-centered work and tutorials. The M.Sc. in Nutrition and Dietetics consists of a total of 33 credit hours over four academic semesters and are divided as follows: 20 credits (nine compulsory courses), six credits (two elective courses), six credits for the thesis, and one credit for the internship (8 weeks training in the field of dietetics). The maximum duration to complete the program is eight semesters.

Required Courses

Course Code	Course title	Credits	Credit Distribution
BIONU 500	Principles of Nutrition	3	(2-3-3)
BIONU 501	Nutritional Epidemiology	2	(2-0-2)
BIONU 502	Biostatistics	2	(2-0-2)
BIONU 503	Research Methods	2	(2-0-2)
BIONU 504	Biochemistry and Physiology of Nutrition	3	(2-3-3)
BIONU 505	Therapeutic Nutrition	2	(2-0-2)
BIONU 506	Nutrition Policy and Management	2	(2-0-2)
BIONU 507	Seminar	1	(1-0-1)
BIONU 508	Community Nutrition	3	(2-3-3)
BIONU 510	Dietetic Internship	1	(1-0-1)
BIONU 599	Thesis	6	(0-18-6)
		27	

Electives

With the consultation of their thesis supervisor(s), students have to select 2 courses of a total of 6 credits from any of the followings:

Course Code	Course Title	Credit	Credit Distribution
Nutrition Track			
BIONU 520	Human Nutrition in the Life cycle	3	(3-0-3)
BIONU 521	Sports Nutrition	3	(3-0-3)
BIONU 522	Food and Nutritional Toxicology	3	(3-0-3)
BIONU 523	Phytochemicals in Health	3	(3-0-3)
BIONU 524	Ethno-nutrition and Health	3	(3-0-3)
BIONU 525	Genetic Aspects of Nutrition	3	(3-0-3)
BIONU 526	Nutrition and Immunology	3	(3-0-3)
BIONU 527	Nutritional Problems in the Arab World	3	(3-0-3)
Dietetics Track			
BIONU 530	Counseling and Communication skills for Dietitians	3	(3-0-3)
BIONU 531	Nutrition Assessment	3	(3-0-3)
BIONU 532	Food Services	3	(3-0-3)

2.8 Tuition fees

Contact the UOB Deanship of Admission and Registration

2.9 Application procedure and contact information

The Application Form can be obtained from the Department of Admission and Registration (address below). The applicant must fill the form and submit it, accompanied by the required original documents, to the Department of Admission and Registration.

Application form

Deanship of Admission and Registration
University Of Bahrain
PO Box 32038 – Sakhir Campus
Kingdom of Bahrain
Tel.: +973 1743 7216, +973 1743 7221

For more information

Department of Biology
College of Science
PO Box 32038 – Sakhir Campus
Kingdom of Bahrain
Tel.: +973 1743 7559, +973 1743 7477

3. The Curriculum

3.1 Study plan

The curriculum plan is executed in blocks as follows:

First Year

Course no.	First semester	Credit Hours
BIONU 500	Principles of Nutrition (L)	3
BIONU 501	Nutritional Epidemiology	2
BIONU 502	Biostatistics	2
BIONU 503	Research Methods	2
Total		9

Course no.	Second semester	Credit Hours
BIONU 504	Biochemistry & Physiology of Nutrition (L)	3
BIONU 505	Therapeutic Nutrition	2
BIONU 506	Nutrition Policy and Management	2
BIONU 507	Seminar	1
Total		8

L : The course includes both lectures and combined lectures/labs.

Second Year

Course no.	First semester	Credit Hours
BIONU 508	Community Nutrition (L)	3
BIONU 5xx	Elective Course 1	3
BIONU 5xx	Elective Course 2	3
Total		9

L: The course includes both lectures and combined lectures/labs.

Course no.	Second semester	Credit Hours
BIONU 510	Dietetic Internship*	1
BIONU 599	Thesis	6
Total		7

* Summer training for 8 weeks

3.2 Thesis Work

A supervised research that is epidemiological (population-based), clinical (hospital-based), or laboratory (lab-based) is required. The study of a relevant nutritional problem extending over a period of 4-6 months can be carried out in Bahrain or in the country of the candidate (in absentia status). The work will be supervised by a main supervisor from the UOB. In the case of in absentia status, a co-supervisor must be assigned in the country where the work will be carried out in accordance with the relevant UOB by-laws and policies. The defense of the master's thesis must satisfy the rules and regulations set by the UOB.

3. 5 Course Descriptions

Compulsory courses

BIONU 500: Principles of Nutrition (2-3-3)

Study of nutrients in relation to human health, essential nutrients, their requirements and functions. The important health issues related to nutritional deficiencies and over-nutrition. Foods which supply human's nutrient needs, their composition and physical properties, effect of processing on nutritive value of foods, preservation food.

BIONU 501: Nutritional Epidemiology (2-0-2)

Fundamentals of nutrition epidemiology. Design, conduct, analysis, and interpretation of epidemiologic studies related to nutrition, particularly the relationship between nutritional status, diet, attributable risks and disease, assessing dietary intake methods of population and individuals. Local and international case studies will be used.

BIONU 502: Biostatistics (2-0-2)

The tool of statistics in the study of human populations, human biology and health. Descriptive statistics; probability; probability distributions; hypothesis testing; statistical inference and vital statistics; multivariate analysis. Statistical packages for nutritional data analysis.

BIONU 503: Research Methods (2-0-2)

Consideration of scientific methods and theoretical orientation as applied to research in nutrition and dietetics. Special consideration given to research planning, investigation techniques, data collection, data organization, interpretation and presentation of the findings in acceptable form. Techniques used in nutrition research involving laboratory, clinical, and surveys.

BIONU 504: Biochemistry and Physiology of Nutrition (2-3-3)

Digestion, metabolism and function of macro- and micro-nutrients, energy metabolism and calorie requirements, metabolic regulation, factors influencing nutrient requirements, body composition and energy metabolism, metabolic needs during stress, evaluation of nutrients quality and biochemical assessment of nutritional status, biochemical and nutritional aspects of obesity and starvation. (Pre-requisite: BIONU 500)

BIONU 505: Therapeutic Nutrition (2-0-2)

Effects of nutrition on human health. Emphasis on the use of nutrition therapy in the treatment and prevention of disease. Specific nutrition interventions including lifestyle strategies, diet, vitamins, minerals, botanicals, essential fatty acids and amino acids for management of diseases. Biochemical, physiological, and cultural aspects are incorporated. (Pre-requisite: BIONU 500)

BIONU 506: Nutrition Policy and Management (2-0-2)

Case study approach to examine the design, planning and implementation of food and nutrition policies as well as the design and management of specific nutrition programs. Nutritional programs which will be examined include fortification, nutrition education, supplementary feeding and food subsidies.

BIONU 507: Seminar (1-0-1)

Development of skills for formal presentation and writing of relevant research topics. Skills, methods and data presentation will be critically evaluated and analyzed. Prior approval (of the instructor) of the article is a must.

BIONU 508: Community Nutrition (2-3-3)

Socio-economic factors affecting nutritional status, such as employment, educational level, family size, age distribution in the family, mass media, beliefs, attitudes, fads, and taboos. The role of food habits in nutritional disorders. (Pre-requisite: BIONU 500)

BIONU 510: Dietetics Internship (1-0-1)

The student has to spend 8 weeks training in the field of dietetics planning. A written report summarizing the training process and the outcomes is required. A formal letter of completion this requirement is also sought from the institution.

BIONU 599: Thesis (0-18-6)

Supervised thesis research that is epidemiological (population-based), clinical (hospital- based) or laboratory (lab-based) is required. The study of a relevant nutritional problem may be carried out in Bahrain or in the country of the candidate (in absentia status). The study duration is between 4 to 6 months and must satisfy internal and external examiners as well as open defense.

Elective courses

Two elective courses with a total of 6 credit hours will be chosen from the selected two tracks given below that complement the student's goals and meet the approval of the student's supervisor.

Nutrition Track

BIONU 520: Human Nutrition in the Life Cycle (3-0-3)

Nutrition requirements and assessment, and dietary intake during gestation, infancy, childhood, adolescence and senescence. Integration of current research will focus on nutritional issues related to these lifecycle stages and on long-term health. (Pre-requisite: BIONU 500)

BIONU 521: Sports Nutrition (3-0-3)

Nutritional needs of athletes and people undertaking substantial exercise programs. The roles of nutrition in optimizing training and sports performance, body composition in relation to sport, provision of fluid, carbohydrate and fat for training, competition and post-exercise recovery, protein requirements for athletes in different sports, role of vitamins and minerals in exercise performance, and supplements and sport. (Pre-requisite: BIONU 500)

BIONU 522: Food and Nutritional Toxicology (3-0-3)

Food toxins formed during the various food handling processes, physiologic and metabolic principles of action of food toxicants, selective toxicity, and cellular detoxification mechanisms, distribution, biotransformation and elimination, advise effect of nutrient excesses, impact of contaminants on utilization of nutrients, food safety and risk assessment techniques. (Pre-requisite: BIONU 500)

BIONU 523: Phytochemicals in Health (3-0-3)

Phytochemicals (non-nutritive biologically active compounds) in fruits, vegetables, grains, herbal supplements and modified foods, phytochemical classes, biochemical structures and pathways, and potential health implications of phytochemicals. (Pre-requisite: BIONU 500)

BIONU 524: Ethno-nutrition and Health (3-0-3)

The nature and ecological significance of food and medicinal plant biodiversity in traditional subsistence systems; scientific, institutional and ethical issues in ethno-nutrition; evaluation and application of plant foods and diet to address contemporary health and nutrition problems. (Pre-requisite: BIONU 500)

BIONU 525: Genetic Aspects of Nutrition (3-0-3)

Mechanisms of nutrient regulation of gene expression, gene-nutrient interactions in the development of chronic diseases, nutritional factors and genes of toxicological significance, nutrigenomics, nutrigenetics and the concept of a genotype-based, personalized nutrition. (Pre-requisite: BIONU 500)

BIONU 526: Nutrition and Immunity (3-0-3)

Fundamentals of immunology, interactions of the immune system with nutrients and the consequent immunity responses, proteins metabolism, biological homeostasis and tissue integrity. (Pre-requisite: BIONU 500)

BIONU 527: Nutritional Problems in the Arab World (3-0-3)

Social, cultural, economic, lifestyle and political factors determining nutrition-related diseases in the Arab countries. Under-nutrition and micronutrient deficiencies, nutrition-related non-communicable diseases such as obesity, heart disease, hypertension, diabetes, osteoporosis and cancer. Intervention programs to prevent and control these problems. (Pre-requisite: BIONU 500)

Dietetics Track

BIONU 530: Counseling and Communication Skills for Dieticians (3-0-3)

Skills in nutrition counseling and in clinical setting, designing diet, behavior forms, assessment report, and giving specific advices. Skills in counseling with parents and other family members. Case studies form different Arab cultures. (Pre-requisite: BIONU 500)

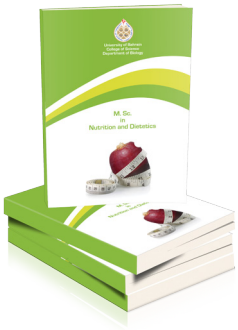
BIONU 531: Nutrition Assessment (3-0-3)

Methods of assessment of nutritional status of various age groups in the community and in the clinics. These include dietary intake, anthropometric measurements, biochemical test and physical

observation. Usage of special software programs in determining dietary intake and anthropometry. (Pre-requisite: BIONU 500)

BIONU 533: Food Service **(3-0-3)**

The role of the dietitian in large scale food planning and service. Menu planning and development, commercial and domestic food preparation methods, dietary modification, food distribution systems, food safety and quality management. Dietitians as managers in food service and contemporary health system. (Pre-requisite: BIONU 500)



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