# **BSc in Clinical Nutrition**

# Clinical Nutrition Department Student Handbook

Version 1.0 (2024)







## **About the Faculty of Applied Medical Sciences**

The Faculty of Applied Medical Sciences was established in 1424 AH / 2003 AD with the aim of meeting the needs of the society by graduating qualified applied medical specialists to support and sustain health services in Saudi Arabia.

#### FAMS Vision:

To be a model in knowledge investment in the field of applied medical sciences

#### **FAMS Mission:**

To promote community health by preparing pioneering graduates in sciences, research, and profession in the field of medical sciences.

## Welcome Message

Promoting health of the Saudi community is vital. This can be achieved through enhancing the quality of healthcare services, promoting wellness, and preventing diseases. Clinical Nutrition is considered one of the important medical specialties as it has a significant role in hospitals and medical facilities through managing chronic diseases and sustaining health of patients. The Clinical Nutrition Department includes many qualified faculty members who are committed to evidence-based practice to support better health outcomes in patients, clients, and the community. The purpose of this handbook is to provide helpful and practical information on the program.

Head of Department Dr. Hebah Kutbi Associate Professor of Clinical Nutrition

## **About the Department**

Clinical Nutrition Department was established in 1424 AH / 2003 AD with the aim of preparing highly qualified graduates in the field of nutrition and clinical dietetics. This department was established to meet the needs of the country and improve the nutritional and health status of individuals, families and groups.

#### **Mission:**

To produce entry-level registered dietitians who adhere the national and international standards of education, research, community services to improve the health of individuals and populations.

#### Goals:

- To prepare graduates to be competent entry-level registered dietitians.
- To prepare graduates with leadership skills and the ability to communicate and work in a multidisciplinary team.
- To promote lifelong learning and self-evaluation.

#### Values:

Beneficence, honesty, balance, protection, creativity, excellence, sustainability



# **Graduate Attributes**

Evidence-	Ethical & legal	Effective	Community	Critical thinking	Management	Cultural
based practice	practice	communication	empowerment	& innovation	of resources	competence
Flexibility & adaptability	Self- development & lifelong learning	Professional autonomy & accountability	Collaboration & networking	Influential leaders & mentors	Advocacy for the profession	

# **Admission Requirements**

Students entering the BSc in Clinical Nutrition must meet all the university and faculty admission requirements. They must also pass the Foundation Year with a high GPA to be eligible for admission to the BSc Clinical Nutrition program.



# **Program Learning Outcomes**

#### **Knowledge and Understanding**

**K1.** Recall knowledge of dietetics, human nutrition, biomedical sciences, food sciences, and behavioral & social sciences in the context of improving and sustaining health as well as treating disease, at individual, community and population levels.

**K2.** Describe the recent Dietetic Practice such as the Scope of Nutrition and Dietetics Practice and the Code of Ethics for the Profession of Nutrition and Dietetics.

**K3.** Describe the work of interprofessional teams and the roles of others with whom the registered dietitian nutritionist collaborates in the delivery of food and nutrition services.

**K4.** Describe safety and quality principles related to nutrition services including food, personnel and consumers as well as healthy food preparations.

K5. Recognize the impact of public and health care policies on dietetic practice, food, and nutrition services.

#### Skills

**S1.** Demonstrate identification with the nutrition and dietetics profession through activities such as participation in professional organizations and defending a position on issues impacting the nutrition and dietetics profession.

**S2.** Use the Nutrition Care Process to make decisions, identify nutrition-related problems and determine and evaluate nutrition interventions for individuals and groups.

**\$3.** Develop an educational session or program/educational strategy for a target population. (including educational materials for healthy and diseases that are culturally and age appropriate and designed for the literacy level of the audience.

**S4.** Plan recipes/meals, formulas and menus that are acceptable and affordable and accommodate with the cultural diversity and health needs of various populations, groups and individuals.

**\$5.** Conduct projects using appropriate research methods, ethical procedures and data analysis.

**S6.** Use current information technologies to locate and apply evidence-based guidelines and protocols.

**\$7.** Demonstrate effective and professional oral and written communication and documentation.

**\$8.** Demonstrate counseling and educational skills to facilitate behavior change and enhance wellness for diverse individuals and groups.

**S9.** Analyze data for assessment and evaluation to be used in decision making for continuous quality improvement.

**\$10.** Calculate nutrient requirements in health and disease for different age groups.

**SII.** Perform accurate anthropometric measurements.

#### Values, Autonomy, and Responsibility

**VI.** Demonstrate how to locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions.

**V2.** Demonstrate critical-thinking, leadership, professionalism, and understanding of cultural competence/sensitivity in overall practice to achieve desired outcomes.

**V3.** Apply management theories to the development of program or services (feasibility studies to provide or develop a product, program or service).

**V4.** Perform self-assessment and develop goals for self-improvement throughout the program.

# **Study Plan**

Year One				
First Semester	Second Semester			
General Mathematics	General Statistics			
General Physics	General Chemistry			
English Language (1)	English Language (3)			
English Language (2)	English Language (4)			
Program-Solving & Programming	General Biology			
Year Two				
First Semester	Second Semester			
Principles of Nutritional Science	Nutritional Biochemistry			
Food Science (1)	Food Science (2)			
Biochemistry	Pathology			
Physiology	Nutrition During Lifecycle			
Anatomy & Medical Terminology	Nutritional Status Assessment			
Arabic Language (1)	Arabic Language (2)			
Islamic Studies (1)	Islamic Studies (2)			
Year Three				
First Semester	Second Semester			
Medical Nutrition Therapy (1)	Medical Nutrition Therapy (2)			
Nutrition Counseling & Education	Research Methods			
Food Microbiology & Hygiene	Enteral & Parenteral Nutrition			
Elective (1)	Elective (3)			
Elective (2)	Elective (4)			
Islamic Studies (3)	Islamic Studies (4)			
	Free Course (1)			
Year Four				
First Semester	Second Semester			
Clinical Rotation in MNT (1)	Clinical Rotation in MNT (2)			
MNT in Pediatric Nutrition	Nutritional Psychology			
Genetic & Metabolic Disorders	Employability Skills for Medical Science			
Research Project & Seminar (1)	Sport Nutrition			
Elective (5)	Community Nutrition			
Free Course (2)	Research Project & Seminar (2)			
	Elective (6)			
	Elective (7)			
Elective Courses				
Nutritional Immunology	Nutritional Epidemiology			
Management Practice in Dietetics	Current Research in Nutrition and Dietetics			
Food & Drugs Interactions	Professional Practice in Dietetics			
Public Speaking in Nutrition	Professional Writing in Nutrition and Dietetics			
Food Habits & Social Concepts	Global Food Security			
Vocational Health and Safety				

# **Course Descriptions**

#### Principles of Nutritional Science (CLN231)

This course aims to explore the roles of carbohydrates, lipids, proteins, vitamins, minerals, and water in the human body. Also, it explains nutrition standards and relationship between other related nutrients as well as requirements, the need for stable health, deficiency and consequence of over-consumption.

### Nutrition During Life Cycle (CLN233)

This course covers assessing nutritional needs of individuals at different stage of the life considering the effect of biological changes, lifestyle factors, and health conditions on the nutritional requirements in normal development and maintaining health.

#### Nutritional Biochemistry and Metabolism (CLN232)

This course will explore the importance of nutritional biochemistry and metabolism of macronutrients, micronutrients, hormones, and eicosanoids to maintain healthy status by understanding the role of different tissues in metabolism to maintain healthy homeostasis.

#### Nutritional Status Assessment (CL240)

This course provides student the scientific knowledge to assess the nutritional status of the community and hospitalized patients. Students will gain an understanding of dietary, biochemical, anthropometric and clinical determinants used in the assessment of individuals and groups.

### Food Science (1) (CLN220)

The main purpose of the course is to teach the categories and properties of food commodities and food products that make up our diet. The course will also include an overview about advanced approaches and technologies to preserve and improve both food quality and safety.

## Food Science (2) (CLN221)

The purpose of this course is to expose students to the principles, methods, and techniques of qualitative and quantitative physical, chemical and biochemical analysis of foods. Students will perform experiments to determine major food components using chemical and instrumental methods. Government regulations and standards related to food quality and labelling will be presented in this course

#### Vocational Health and Safety (CLN321)

This course focuses on aspects of vocational health and safety in different workplaces.

#### Nutritional Immunology (CLN334)

The course consists of lectures on basic principles of immunology and mechanisms of immune response, as well as the impact of nutrients and nutritional status on immunity and critically evaluating the literature with respect to claims of the effects of nutrients on immune responses.

### Medical Nutrition Therapy (1) (CLN345)

This course is an integration of pathophysiology, biochemistry, and nutrition principles that form the basis for medical nutrition therapy in health care. Students will study the role of food and nutrition in the management of various diseases and conditions.

### Global Food Security (CLN351)

This course introduces the main global food problems (hunger, malnutrition and famine) and health-related effects common to the developing versus developed countries in the globalization context. It explores barriers to food production and availability. It discusses the role of research, agriculture development, international trade in the setting up of a global strategy towards sustainable food production.

#### Nutritional Epidemiology (CLN 350)

This course introduces principles of epidemiology and measures of diseases. The course highlights the importance of nutritional epidemiology in health and provide a critical approach with recent trials carried in the Kingdom.

#### Nutrition Counseling and Education (CLN347)

Effective nutrition interventions depend on evidence-based theories, models, and strategies put into practice. This course will review evidence-based theories used in planning and delivering nutrition communications and counseling.

#### Food & Drugs Interactions (CLN 349)

This course will teach the basic aspects of pharmacology that helps student to identify the drug food interaction. Additionally, this course will enable students to clinically evaluate and avoid drug food interactions. During this course the clinical nutrition students will gain the essential knowledge that help guiding them during their future clinical practice.

### Enteral & Parenteral Nutrition Support (CLN348)

The course is intended to cover the current methods for the enteral and parenteral nutrition therapy including indications, contraindications, types of feeding, feeding access, initiation, method of administration, complications, monitoring, and management.

### Medical Nutrition Therapy (2) (CLN346)

This course is an integration of pathophysiology, biochemistry, and nutrition principles that form the basis for medical nutrition therapy in health care. Students will study the role of food and nutrition in the management of various diseases and conditions.

#### Nutritional Psychology (CLN435)

This course involves the study of health psychology as it relates to human nutrition. It covers important definitions and historical background, personal and environmental determinants of behavior, associations of macro- and micronutrients and physical activity with psychological health and psychological disorders. This course includes the study of eating disorders and the development of eating behaviors among children.

#### Food Habits and Social Concepts (CLN436)

This course is designed to help students develop a "working knowledge" of how socioculture, environmental and psychological factors influence food behavior and human health as well as understanding of the role of culture in influencing food selection, preparation, consumption and in producing different attitudes and beliefs around food.

### Community Nutrition (CLN452)

This course is designed to introduce the process of Public Health Nutrition Cycle to develop nutrition programs among different age groups. This course also demonstrates previous nutrition Programs carried worldwide, including limitations and strengths. The course provides students with the chance to carry a community nutrition program in Jeddah.

### Research Project and Seminar (1) (CLN460)

The course involves the study and application of the basic concepts of research methods in health sciences, such as the research process, project planning, literature review in health sciences, formulating study objectives, postulating hypotheses, research methodology, data collection, basic statistical analysis, presentation and publication. The course also comprises core concepts and challenges within ethics.

#### Research Project and Seminar (2) (CLN461)

The course involves the study and application of the basic concepts of research methods in health sciences, such as the research process, project planning, literature review in health sciences, formulating study objectives, postulating hypotheses, research methodology, data collection, basic statistical analysis, presentation and publication. The course also comprises core concepts and challenges within ethics.

#### Professional Writing in Nutrition and Dietetics (CLN462)

This course prepares the students to be familiar to professional writing about food, nutrition and public health. This is an advance course that gives the students the opportunity to apply the basic skills in practice by writing professional book chapters and/or research-based papers such as scientific reviews, original manuscripts and reports for scientific publications.

#### Current Research in Nutrition and Dietetics (CLN463)

This is an advanced course that explores current topics related to clinical nutrition, community nutrition, public health, and food technology.

### Professional Practice in Dietetics (CLN470)

This course provides detailed information on the role of dietitian in modern health care system and the application of interviewing, counseling, and educational techniques in dietetics.

### Management Practice in Dietetics (CLN471)

This course focuses on the aspects of management practice in dietetics, which includes managing an organization, tools for the managers, managing human resources, food, equipment, facilities, and financial resources. This course also covers managerial skills such as leadership, decision- making, and communication skills in the food service or clinical nutrition.

#### Public Speaking in Nutrition (CLN474)

The Public Speaking in Nutrition is an interactive course that prepare and train CLN senior students in public speaking by using a comprehensive set of discipline-specific learning tools, assignments, discussions, and assessments using a technology-enhanced approach and multimedia elements (e.g., videos, audio, and analysis of electronic and print martials & media). It introduces students to the basics of effective public speaking and prepare them to deliver speech in public. The course enhances students' skills in building an appropriate foundation for their public speaking.

### Clinical Rotation in Medical Nutrition Therapy (1) (CLN480)

The course provides an opportunity for senior students to apply theories and concepts learned in an academic environment to real-life clinical settings, preparing them for the upcoming internship year and ensuring their readiness to practice their profession after completing the program. The course involves development of various skills required for the nutrition and dietetic profession, including effective communication with hospital staff, appropriate interaction with patients, assessment and analysis of medical data, planning nutritional management strategies for the recruited case studies, making evidence-based decisions, and professional documentation of nutritional assessment and management plans. During the hospital rotations, the students will be assigned into groups using [Peer Assisted learning (PAL)] approach throughout the entire semester. Senior students will be guided in their learning using a combination of guidance, observations, discussions and evaluation of conducted patients' data and completed tasks and activities. This will be through the pre-assigned readings, morning meetings, in-class meetings, feedback, debriefings, reflections.

### Genetic & Metabolic Nutritional Disorders (CLN481)

The course covers the principle of nutrigenetics, nutrigenomics, nutritional epigenomics, as well as the medical nutrition therapy related to some genetic & metabolic disorders such as inborn errors of protein, carbohydrate, and lipid metabolism.

#### Medical Nutrition Therapy in Pediatrics (CLN482)

This course involves describing the pathophysiology of the different pediatric nutritional related disorders & their implications for nutritional care; Evaluation of the nutritional status of children with a variety of pediatric diseases; Development of nutrition plans for chronic pediatric diseases affecting nutritional status; Application of the NCP in pediatrics with a variety of pediatric diseases and calculation of nutrient requirements for selected diseases in pediatrics; Interpretation of the nutritional assessment information; Discussion of roles of diet in disease progression, prevention, and nutritional management.

### Sport Nutrition (CLN483)

Examines fundamental principles of human nutrition and metabolism and how exercise and sport influence nutrient need and eating strategies. This includes understanding energy and nutrient metabolism during exercise, assessing needs, determining nutritional needs of athletes and recreationally active individuals, setting diet plans, and monitoring.

### Clinical Rotation in Medical Nutrition Therapy (2) (CLN484)

The course provides an opportunity for senior students to apply theories and concepts learned in an academic environment to real-life clinical settings, preparing them for the upcoming internship year and ensuring their readiness to practice their profession after completing the program. The course involves development of various skills required for the nutrition and dietetic profession, including effective communication with hospital staff, appropriate interaction with patients, assessment and analysis of medical data, planning nutritional management strategies for the recruited case studies, making evidence-based decisions, and professional documentation of nutritional assessment and management plans. During the hospital rotations, the students will be assigned into groups using [Peer Assisted learning (PAL)] approach throughout the entire semester. Senior students will be guided in their learning using a combination of guidance, observations, discussions and evaluation of conducted patients' data and completed tasks and activities. This will be through the pre-assigned readings, morning meetings, in-class meetings, feedback, debriefings, reflections.

## **Scientific Research**

Our research investigates the role of dietary habits and key nutrients in health, as well as in the prevention and treatment of chronic diseases. Specifically, we are interested in studying diabetes, obesity, metabolic disorders, gastrointestinal disorders, gut health, bone health, cardiovascular health, cognitive health and psychological disorders. Additionally, we are interested in studying food science, safety, and microbiology.

## **Internship Year**

After completing all required courses over four academic years, students are required to spend a full year (12 months) training and practicing clinical nutrition. This involves training rounds in approved hospital wards and specialized health centers, under the joint academic supervision of the Clinical Nutrition Department in the Faculty of Applied Medical Sciences. It is also supervised by the staff members of hospital wards and specialized health centers. Student performance is evaluated following each clinical rotation by the preceptor. A student achieving < 60% must repeat the rotation.

For more information about the internship year, scan the QR code



## **Graduation Requirements and Certification**

In order for a student to qualify the BSc degree, he/she must successfully complete the total credit hour requirements (137 study units) including university requirements (26 study units), faculty requirement (23 study units) and departmental requirements (88 study units). The BSc in Clinical Nutrition is a four-year program with an additional obligatory year for clinical practice (Internship Program). Following the Internship Program, the student is granted the degree of Bachelor of Science in Clinical Nutrition & an internship completion certificate. The graduate will apply to the Saudi Commission for Health Specialties to be awarded a certification of 'Clinical Nutrition Specialist.'

# **Employment Opportunities**

- Hospitals and other health care facilities, educating patients about nutrition and administering medical nutrition therapy as a member of the health care team.
- Management of food service operations in hospitals, as well as in day-care centers and rehabilitation facilities.
- Sports nutrition and corporate wellness programs, educating clients about the relationship between food, fitness, and health.
- Food and nutrition-related businesses and industries; working in communications, consumer affairs, public relations, marketing, or product development.
- Private practice working under contracts with health care or food companies, or in their own business. Dietitians may provide services to foodservice or food vendors, and distributors, or athletes, nursing home residents.
- Community and public health settings teaching, monitoring, and advising the public, and helping to improve their quality of life through healthy eating habits.
- Universities and medical centers; teaching physicians, nurses, dietetics students, and others the sophisticated science of foods and nutrition.
- Research areas in food and pharmaceutical companies, universities, and hospitals, directing or conducting experiments to answer critical nutrition questions and find alternative foods or nutrition recommendations for the public.



## **Academic Rules**

**Attendance:** Student should attend all lectures, practical and clinical lessons. The student will not be permitted to enter the final examinations if the attendance is less than 75% of lectures, practical and clinical lessons appointed for each course through the academic year, and will be considered a failure in the course. Attendance is monitored through course coordinators. A student absence of 10% will be issued a 1<sup>st</sup> warning; A student absence of 20% will be issued a 2<sup>nd</sup> warning; If a student is absent for  $\geq$ 25% will be issued a final warning (Denial of examination [DN]).

**Progression from year to year:** Studying in the faculty follows the full academic year system. It is consisted of four years study levels followed by a compulsory practical year. Students who succeed will be registered for the next study levels gradually from the low levels up to higher levels according to approved study plan. If students fail a course, they are allowed to take reset examinations; The reexaminations or reset examinations take place once a year before the first semester of the following academic year (usually, during Summer). If Students fail the reset exams, they have to repeat the course without progressing to next year.

**Student Appeals:** The University states that all students have the right to appeal with regard to examination results. In that case, they should, first, approach the course instructor and look at the exam together. If students still disagree with the grade, they can refer to the Head of the Department, who will then assign a member of the department to reassess their examination (formulation of a committee).

**Exams:** Students are tested periodically throughout the academic year. Students must be punctual to examination schedule, and will not be permitted to perform the test if were late by 30 minutes. Students may not leave the exam site/classroom till after 30 minutes. If students were absent at a midterm exam, he/she must provide an acceptable excuse (sick leave report; first-degree relative death report; other non-health related compelling reasons-must be submitted to course coordinator and head of department).

## **Academic Advising Services**

An academic advisor is assigned to each student at the beginning of the academic year. The assigned academic advisor is identified through the orientation day and through the OdusPlus system.

**Students Rights in Academic Advising:** Direct or electronic communication with the academic advisor; Obtain academic services such as course registration; Discuss academic future with the academic advisor; Benefit from available services; Confidentiality of students' information.

**Student Duties:** Review the Academic Advising and the Education & Examination Manuals (available through KAU website); To be held responsible for the academic performance given that academic advising is an approach for assistance and coaching; To know and communicate with the assigned academic advisor.



## **CLN Department Organizational Chart**

\* Students participate in the departmental advisory committee.

## **National Academic Accreditation**

It is a system implemented on Saudi universities to ensure that the education process, academic environment, and facility's infrastructure operate with high quality. Some of accreditation goals include enhancing quality by applying the Evaluation Commission standards; Improving the program through the participation of teaching staff, students, and graduates in decision-making; Increase the number of program beneficiaries where the accreditation requires providing services for students, graduates and the community.

The student has an important role in the national academic accreditation process and the application of its standards. The most prominent roles of students include: Provide improvement suggestions in student meetings; Participation in curricular- and extracurricular activities; Provide suggestions on work and initiatives that brings value to the community; Share personal opinions and suggestions and evaluate the provided services through OdusPlus surveys, knowing that these surveys are anonymous and confidential. These centralized surveys include: alumni surveys; internship surveys; student course evaluation surveys; student experience evaluation surveys; student program evaluation surveys.

## **Exit Exam**

It is a comprehensive written exam for fourth year students that aims to evaluate student's knowledge and education. Students are oriented on the exit exam and provided an opportunity to practice the test prior to exam commence. The components of the exit exam are structured based on the rubric of the SCFHS which provides them an opportunity to practice the test.

## **General Rules**

**Dress Code:** Students must adhere to proper Islamic appearance and dress code (purple scrub); Wear loose long white coat that reaches below the knee. If violated, students will be subject to verbal warning or faculty disciplinary action. Smoking is prohibited within campus; violation will result in financial penalty. Students must wear the ID card at all times and display it clearly. Students must tie their hair, wear a coat, closed shoes, and scarf.

## **Contact Info**

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