

Jordan University of Science and Technology
Faculty of Agriculture
Department of Nutrition and Food Technology
First Semester 2022/2023
Course Specifications

| Title & Instructor | |
|---------------------------|-------------------------------------|
| Course Title | Metabolic nutrition |
| Course Number | NF 487 |
| Prerequisites | |
| Course Website | |
| Instructor | Dr. Sana Janakat |
| Office Location | C4 L3 |
| Office Phone | |
| Office Hours | To be determined and by appointment |
| E-mail | |
| Teaching Assistant | To be announced |

Course Description

This course discusses the biochemical processes involved in the utilization and metabolism of macronutrients, and the interrelationships between macronutrients and micronutrients and their role in the body's control of energy balance. Nutritional factors which contribute to the pathophysiology of the most common metabolic diseases such as obesity, diabetes, and cardiovascular diseases will be examined

| Learning Outcomes | Weights |
|--|------------|
| To specify detailed information on the function, digestion, transport, storage, and metabolism of macronutrients | 25% |
| To describe key metabolic pathways involved in energy metabolism | 30% |
| Identify micronutrients that function in energy metabolism | 30% |
| Identify inborn error of metabolism associated that can be managed via nutrition | 15% |

Text Book & References

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|---------------------|---|
| Title | Advanced Nutrition and Human Metabolism |
| Author(s) | Gropper, S. and Smith, J. |
| Publisher | |
| Year | |
| Edition | 6th Edition |
| Book Website | |
| References | Stipanuk and Caudill (2013) Biochemical, Physiological and Molecular Aspects of Human Nutrition. Third Edition. Saunders (Imprint) USA. |

Teaching & Learning Methods

PowerPoint slides presented by the instructor and provided as soft and hard copies for students.
Small group discussions and in-class activities.

| Assessment | | |
|------------------------|--------------------------|---------------|
| Assessment Type | Expected Due Date | Weight |
| First Exam | To be determined | 30% |
| Second Exam | To be determined | 30% |
| Final Exam | To be determined | 40% |

| Course Content | | |
|-----------------------|--|------------|
| Week | Topics | ref |
| 1 | Overview of Digestion and Absorption | 1,2 |
| 2 | Structure, Nomenclature, and Properties of Carbohydrates | 1,2 |
| 2,3 | Carbohydrate Digestion and Absorption | 1,2 |
| 3,4 | Structure and Properties of Proteins and Amino Acids | 1,2 |
| 5 | Digestion and Absorption of Protein | 1,2 |
| 6 | Lipid Structure, Nomenclature, and Chemical Properties | 1,2 |
| 7 | Digestion and Absorption of Lipids | 1,2 |
| 8 | Dietary Fiber | 1,2 |
| 9 | Carbohydrate Metabolism: Synthesis and Oxidation | 1,2 |
| 10,11 | Protein Synthesis and Degradation | 1,2 |
| 11 | Amino Acid Metabolism | 1,2 |
| 12 | Cholesterol and Lipoproteins: Synthesis, Transport, and Metabolism | 1,2 |
| 12 | Lipid Metabolism: Polyunsaturated Fatty Acids | 1,2 |
| 13 | Control of Energy Balance | 1,2 |
| 13,14 | Inborn error of metabolism | 1,2 |

| Policies | |
|-----------------|---|
| Exams | The exams will include a variety of questions, true-false, multiple choice, fill in the blanks, and essay questions. |
| Cheating | Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may |

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|----------------------|---|
| | take the form of copying from another student or bringing unauthorized materials into the exam room (e.g., crib notes or cell phones). Exam cheating can also include exam impersonation. A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty. |
| Attendance | Consistent with Jordan University of Science and Technology guidelines, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. No make-up exams will be given for unexcused absences. |
| Participation | Participation and discussion are encouraged for earning additional points (extra credits). |
| Withdraw | Consistent with Jordan University of Science and Technology guidelines |