Course Description Form

Course Name:
Metabolic pathways
Course Code:
MEPA373
Semester / Year:
Second semester (spring) / 2024-2025
Description Preparation Date:
1/2/2025
Available Attendance Forms:
Presence
Number of Credit Hours (Total) / Number of Units (Total)
2 theoretical hours + 3 practical hours (75 hours) / 3.5 units
Course administrator's name (mention all, if more than one name)
Name: Dr.Hala Abdalhadi Salih
Course Objectives
Understand why energy is necessary for sustaining life. Understand how organisms transform matter and energy in accordance with the laws of thermodynamics. Recognize that energy conversions are dependent on metabolic pathways. Understand the role of enzyme inhibition in metabolic pathways and predict the effects of enzyme deficiency due to genetic disease. Apply knowledge of converging metabolic pathways and enzyme inhibition to understand the treatment options for a metabolic
Teaching and Learning Strategies

Theoretical	Practical
- Interactive lecture - Brainstorming - Dialogue and discussion - Assigning reports -Conducting monthly and daily examinations	Interactive lecture -Discussion, dialogue, brainstorming -Conducting laboratory experiments -Assigning reports -Conducting daily and monthly examinations

9- Course structure

Week	Hours	Learning Outcomes	Module/Topic	Teaching Method	Assessment Method
1	Theoretical:2 Practical:3	Theoretical : a1 Identify metabolic pathways of major biomolecules. Practical: b1 experiment with carbohydrate estimation methods.	Theoretical: Introduction to Metabolic Processes Practical: Blood Glucose Estimation	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
2	Theoretical:2 Practical:3	Theoretical: a1 Identify metabolic pathways of major biomolecules. Practical: b1 experiment with carbohydrate estimation methods	Theoretical: Carbohydrate Metabolism (Glycolysis) Practical: Alternative Glucose Estimation	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
3	Theoretical:2 Practical:3	Theoretical: a1 Identify metabolic pathways of	Theoretical: Glycogenolysis	Theoretical: Lectures,	Quizzes, assignments,

		major biomolecules. Practical: b1 experiment with carbohydrate estimation methods.	Practical: Tissue Glycogen Estimation	board work, direct dialogue Practical: Tasks and reports	discussions
4	Theoretical:2 Practical:3	Theoretical: a1 Identify metabolic pathways of major biomolecules. Practical: b1 experiment with carbohydrate estimation methods	Theoretical: Cori Cycle Practical: Cori Cycle Experiment	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
5	Theoretical:2 Practical:3	Theoretical: a1 Identify metabolic pathways of major biomolecules. Practical: b1 experiment with carbohydrate estimation methods	heoretical: Carbohydrate metabolism pentose n path Practical:fermentation	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
6	Theoretical:2 Practical:3	Scientific Visit d1: Link theory with practice through observation.	Real-life observations of tools, procedures, and behaviors	Observation and discussion	Participation and report
7	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: a2 The student is familiar with different methods for estimating the types of proteins	Theoretical: Carbohydrate metabolism Phosphorylation path Practical:Creatinin Practical : kidney function	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions

8	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: a2 The student is familiar with different methods for estimating the types of proteins.	Theoretical: Carbohydrate metabolism Phosphorylation path Practical:Creatinin Practical : kidney function	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
9	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: a2 The student is familiar with different methods for estimating the types of proteins different methods for estimating the types of proteins	heoretical: Carbohydrate metabolism Glycogenohysis Practical:urea	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
10	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: a2 The student is familiar with different methods for estimating the types of proteins different methods for estimating the types of proteins	Theoretical: Carbohydrate metabolism Glycogen construction path Practical:Creatinin	Theoretical: Lectures, board work, direct dialogue	Quizzes, assignments, discussions
11	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: a2 The student is familiar with different methods for estimating the types of proteins different methods for estimating the types of proteins.	Theoretical: lipid Metabolism Practical: Uric Acid Analysis	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions

12	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: a2 The student is familiar with different methods for estimating the types of proteins different methods for estimating the types of proteinss.	Theoretical: Lipid Metabolism Practical: Kidney Function Tests	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
13	Theoretical:2 Practical:3	Scientific Visit d1: Link theory with practice through observation	Real-life observations of tools, procedures, and behaviors	Observation and discussion	Participation and report
14	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: c1 The student detect vitamins and trace element	Theoretical: ketogensis Metabolism Practical: Iron Detection	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions
15	Theoretical:2 Practical:3	Theoretical: a1 The student learns about the metabolic pathways of large life molecules Practical: c1 The student detect vitamins and trace element.	Theoretical: Vitamin Metabolism Practical: Vitamin Detection	Theoretical: Lectures, board work, direct dialogue Practical: Tasks and reports	Quizzes, assignments, discussions

10-Course Evaluation

No.	Assessment Method	Assessment Week	Score	Weight (%)
1	Theoretical Report + Lab Reports	Week 15	7 (Theory) + 6 (Practical)	13%
2	Short Quiz (Q)	Week 3	4 (Theory) + 2 (Practical)	6%
3	Midterm Exam (Theory + Practical)	Week 9	10 (Theory) + 5 (Practical)	15%
4	Short Quiz (Q)	Week 12	4 (Theory) + 2 (Practical)	6%
5	Final Practical Exam	Week 5	20	20%
6	Final Theoretical Exam	Week 6	40	40%

Total			100	100%

Theoretical Lecturer: Hala Abdulhadi Saleh

Practical Lecturer: Hala Abdulhadi Saleh

Chairman of the Scientific Committee
Prof.A: Taha M taqi

Head of Food Science Department
Prof.A: Taha M taqi

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كلية الزراعة والغابات
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