
COURSE: Advanced Biochemistry

ACADEMIC YEAR: 2019/2020

TYPE OF EDUCATIONAL ACTIVITY:

TEACHER: Faustino Bisaccia

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website:

phone: 0971205513

mobile (optional):

Language: **english**

ECTS: **8** (lessons e
tutorials/practice) 8n. of hours: **68** (lessons e
tutorials/practice)Campus: **Potenza**
Dept./School: **Dipartimento di
Scienze**
Program: **Scienze Chimiche**Semester:
(date) **I sem. 1 ottobre
20 gennaio 2020**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

○

The program is aimed at understanding the molecular mechanisms that control metabolism and cell communication, detoxification processes and recombinant DNA technologies

PRE-REQUIREMENTS

SYLLABUSSyllabus:

General information on biological macromolecules.

Metabolism of purine and pyrimidine nucleotides.

Nucleic Acid Structure. DNA Replication, Transcription, Protein Synthesis.

Biotechnology of recombinant DNA.

Preparation and purification of recombinant proteins. The recycling of proteins, the ubiquitin / proteasome pathway.

Structure, function and metabolism of lipoproteins; dyslipidemia.

Membrane transport, active and passive transport, coupled transport; carrier proteins.

Ion channels. nerve impulses.

Signal transduction. Membrane receptors and soluble receptors.

Molecular mechanism of vision The endocrine system.

Hormonal regulation of glucose and lipid metabolism; hyperlipidemia, diabetes.

Environmental pollutants, ROS, oxidative stress.

Detoxification mechanisms. The heme metabolism; cytochrome p450; alcohol metabolism. DNA repair.

Nutritional needs. Needs of macronutrients: digestion and absorption.

Micronutrients: vitamins and minerals.

Mechanism of action of fat soluble vitamins (A, D, E, K). The antioxidants.

TEACHING METHODS Lectures – Lab activities

EVALUATION METHODS vote

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

- SUGGESTED TEXTBOOKS
 - BIOCHIMICA PER LE DISCIPLINE BIOMEDICHE.ED. AMBROSIANA
 - J.W.BAYNES M.H. DOMINICZAK
 - I PRINCIPI DI BIOCHIMICA DI LEHNINGER DI DAVID L.NELSON, MICHAEL M. COX ZANICHELLI
-

INTERACTION WITH STUDENTS*friday 11,30 13,30*

EXAMINATION SESSIONS (FORECAST)¹

Calls for examination

| Month | Year | Expected call |
|-------|------|---------------|
|-------|------|---------------|

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|----------|------|---|
| February | 2020 | X |
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| March | 2020 | X |
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| April | 2020 | X |
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| May | 2020 | X |
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| June | 2020 | X |
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| July | 2020 | X |
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|-----------|------|---|
| September | 2020 | X |
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| October | 2020 | |
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| | | |
|----------|------|---|
| December | 2020 | X |
|----------|------|---|

Examination Panel:

President: _____ Bisaccia Faustino _____

Member: __Castiglione Morelli Maria Antonietta _____

Member: Ostuni Angela _____

Member: Armentano Maria Francesca

SEMINARS BY EXTERNAL EXPERTS YES NO

FURTHER INFORMATION

¹Subject to possible changes: check the web site of the Teacher or the Department/School for updates.