L DIPARTIMENTO DI SCIENZE

OGO DELLA STRUTTURA PRIMARIA

COURSE: **GENERAL AND APPLIED GENETICS**	
ACADEMIC YEAR: **2018/2019 – I semester**	
TYPE OF EDUCATIONAL ACTIVITY: **CHARACTERIZING**	
TEACHER: **Prof. Maria Brigida LIOI**	
e-mail: **maria.lioi@unibas.it**	website:
phone: : **0971/205016**	mobile (optional): **3204371177**
Language: **ITALIAN**	

ECTS: **9** (7 ECTS of lessons and 2ECTS of tutorials/practice)	n. of hours: 56 hours of lessons and 24 hours of tutorials/practice)	Campus: Potenza Science Department Program: Biotechnology (L-2)	Semester: **I** (Course beginning 01/10/2019 ending on 20/01/2020)

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

knowledge and understanding

The student will acquire the theoretical fundamentals of the concept of gene and appropriate operational elements to understand and predict the main mechanisms of the heredity, the genetic regulation and variability in living organisms .

Applying knowledge and understanding

Acquisition of methodological skills to carry out a genetic analysis.

Judgments

Ability to critically evaluate the results and implications of discoveries in genetics.

Communication skills

The student will express their knowledge with appropriate terms making them clearly understandable even for non- experts.

learning capacity

The student will be able to consult books and scientific literature in order to refine the necessary information for the study of the discipline.

PRE-REQUIREMENTS

knowledge and basic skills in General Biology .

SYLLABUS

HOURS OF LESSONS	TOPIC
8	Introduction to Genetics - Chromosomes and cells reproduction
8	Fundamental principles of heredity
8	Sex determination and its related features
8	Extensions and variations of the basic principles of heredity - Analysis of pedigrees - Genetics test
8	Linkage - Recombination and mapping - Chromosomal variability

8	Nucleic Acids - The gene mutations and DNA repair - Control of gene expression in eukaryotes
8	Epigenetics - Genetics of development - Cancer genetics - Introduction to quantitative and population genetics
HOURS OF CLASSROOM TUTORIAL	TOPIC
24	exercises related to theoretical arguments

TEACHING METHODS

56 hours of theoretical lessons concerning the contents and 24 hours of classroom tutorials consisting in carrying out exercises

EVALUATION METHODS

The exam consists in a written and oral examination. To take the oral examination the student has to pass the written test (7 exercises) . The time allowed for the written test is one hour (1 h) . Final evaluation: Score on 30 points

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

-Pierce B.A. -- GENETICA – ed. Zanichelli.
-Suzuki D.T., Griffith A.J.F., Miller J.H., Lewontin R.C. – GENETICA – ed. Zanichelli.
-Fristrom J.W., Clegg M.T. – PRINCIPI DI GENETICA – ed. Zanichelli.

-Griffith A.J.F., Wessler S.R., Carrol S.B., Doebley J. GENETICA : PRINCIPI DI ANALISI FORMALE. – Zanichelli.

-Fantoni A., Bozzaro S., Del Sal G., Ferrari S., Tripodi M. : BIOLOGIA CELLULARE E GENETICA (Parte seconda genetica) – Ed. Piccin.

-Daniel L. Hartl, Elizabeth W. Jones – GENETICA Analisi di geni e genomi – EdiSES.

INTERACTION WITH STUDENTS

At the beginning of the course the professor communicates the text books. Additional material (lesson notes used by teacher) will be provided during the course

The professor is available at all times for giving guidance to the students by previously e-mail according

EXAMINATION SESSIONS (FORECAST)[1]

07/02/20; 20/03/20; 08/05/20; 12/06/20; 10/07/20; 18/09/20; 16/10/20; 04/12/20

SEMINARS BY EXTERNAL EXPERTS YES □ NO X

FURTHER INFORMATION

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

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