

COURSE OF STUDY Herbal and Nutraceutical Science

ACADEMIC YEAR 2023-24

ACADEMIC SUBJECT Vegetal Biology (Animal Biology and Vegetal Biology)

General information	
Year of the course	1st
Academic calendar (starting and ending date)	02/10/2023 – 14/01/2024
Credits (CFU/ETCS):	5
SSD	BIO15
Language	Italian
Mode of attendance	obligatory

Professor/ Lecturer	
Name and Surname	MARIA PIA ARGENTIERI
E-mail	mariapia.argentieri@uniba.it
Telephone	0805442732
Department and address	<i>Dip. Farmacia-Scienze del Farmaco (3rd floor, room 416)</i>
Virtual room	30tg37z
Office Hours (and modalities: e.g., by appointment, on line, etc.)	All days, by appointment

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
115	40		75
CFU/ETCS			
5	5		

Learning Objectives	The course is mainly aimed at the study of living beings, in particular plant ones. During the course, topics aimed at understanding how each individual biological process fits into a broader framework will be addressed, for example at the level of a cell and then of an entire organism.
Course prerequisites	The requirements required of students who intend to enroll in the three-year degree course in Herbal and Nutraceutical Sciences are: Mathematics (proportions, percentages, roots, powers, logarithms, equivalences, first degree equations); Physics (physical quantities, units and measurement systems); Chemistry (Periodic system of the elements, substances, elements, mixtures and compounds, concept of chemical reaction, changes of state); Biology (knowledge about the cell, basic knowledge of the main biological molecules).

Teaching strategie	Classroom lessons
Expected learning outcomes in terms of	
Knowledge and understanding	○ General aspects of Vegetal Biology

on:	
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ ability to classify and recognize plant organisms
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Develop and practice protocols for the recognition of vegetal drugs • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to communicate with peers and superiors about the knowledge acquired • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to learn the contents of the subsequent Pharmacognosy course.
Syllabus	
Content knowledge	<p>Introduction to Vegetal Biology. Importance of the plants. Comparison between animals and vegetables</p> <p>Cell</p> <ul style="list-style-type: none"> - Animal cell versus e Vegetable cell. - Cell wall: functions, chemical composition - Cell wall modifications. - Plant cell structures: Vacuole, Plastids: Structure and function <p>Tissues</p> <p>Meristematic tissue Parenchyma Sclerenchyma Collenchyma Vascular tissue Secretory tissue Protective tissue</p> <p>Organography</p> <p>Root (Origin and development) Stem (Origin and development) Leaf Seed Flower Fruit</p> <p>Plant metabolism: Photosynthesis</p> <p>Classification of vegetable organisms.</p>
Texts and readings	<p>Evert R., Eichhorn S.- <i>La biologia delle piante di Raven</i>- (settima edizione) Ed. Zanichelli</p> <p>Senatore F.- <i>Biologia e Botanica farmaceutica</i>- (seconda edizione) Ed. Piccin</p> <p>Hillis D., Sadava D., Heller C., Price M.- <i>Fondamenti di Biologia</i> – Ed. Zanichelli</p> <p>Morris J., Hartl DL., Knoll R.A., Michael M. – <i>Biologia, Come funziona la vita- Piante e Funghi</i> – Ed. Zanichelli</p>
Notes, additional materials	Atlas of vegetable anatomy
Repository	The Teams code will be provided during the lesson to consult the teaching material
Assessment	
Assessment methods	The student must demonstrate the ability to describe a plant organism and the metabolic cycles that characterize it.

	<p>The exam is oral and will take place on the same day as the Animal Biology module. C</p> <p>The verification method is identical for attending and non-attending students.</p>
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ General aspects of vegetal biology • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to recognize and describe a vegetal drug • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ Ability to recognize the different plant organs and to describe the microscopic structure • <i>Communication skills</i> <ul style="list-style-type: none"> ○ Ability to move across the various topics of the course • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Useful information for the career
Final exam and grading criteria	<p>The final grade is awarded out of thirty. The exam is considered passed upon reaching the minimum mark (18) of the individual modules carried out at the same time.</p>
Further information	
	.