

SYLLABUS - LM.Sc.Mat.

Principali informazioni sull'insegnamento	
Denominazione dell'insegnamento	<i>Enhanced production of aquatic biomass</i>
Corso di studio	Master's Degree in Materials Science and Technology LM-Sc.mat. (Bioref)
Anno di corso	<i>secondo</i>
Crediti formativi universitari (CFU) / European Credit Transfer and Accumulation System (ECTS):	1
SSD	<i>CHIM03</i>
Lingua di erogazione	<i>English</i>
Periodo di erogazione	<i>III Semester</i>
Obbligo di frequenza	<i>Only for Labworks</i>

Docente	
Nome e cognome	Angela Dibenedetto
Indirizzo mail	angela.dibenedetto@uniba.it
Telefono	+39 0805442084
Sede	<i>Dipartimento di Chimica, Università di Bari "Aldo Moro", via Edoardo Orabona, 4, Bari (Italy)</i>
Sede virtuale	<i>Lectures are delivered face to face, unless otherwise stated for serious reasons</i>
Ricevimento (giorni, orari e modalità)	Any day, from Monday to Friday morning, upon appointment.

Syllabus	
Obiettivi formativi	Influence of the N: P supply ratio on biomass productivity and time-resolved changes in elemental and bulk biochemical composition.
Prerequisiti	Basic inorganic and organic chemistry.
Contenuti di insegnamento (Programma)	Effect of nutrient on the cultivation process and on the composition of the bioil; N starvation and P starvation effects.
Testi di riferimento	<ol style="list-style-type: none"> 1) <i>Biorefinery: from biomass to chemicals and fuels, Towards circular economy. M Aresta, A Dibenedetto, F Dumeignil Eds, 2021 De Gruyter Publishers</i> 2) <i>Selected scientific papers from open-access literature.</i> 3) <i>Papers from non-open-access literature</i>
Note ai testi di riferimento	<i>Selected Chapters</i>

Organizzazione della didattica			
Ore			
Totali	Didattica frontale	Pratica (laboratorio, campo, esercitazione, altro)	Studio individuale
8	8	0	17
CFU/ETCS			
1	1	0	

Metodi didattici	
	Face-to-face lectures. Questions to students for home-work and feedback at the end of each module. Field visits to: 1. Aquaculture plant for the production of specialized microalgae

Risultati di apprendimento previsti	
Conoscenza e capacità di comprensione	<ul style="list-style-type: none"> ○ Knowledge of different biomass (plants, macroalgae, microalgae), their adaptation to be grown in ponds, and productivity. Composition and effect of N and P starvation.

CONSIGLIO INTERCLASSE DI SCIENZA E TECNOLOGIA DEI MATERIALI

Technologie per conoscenza e capacità di comprensione applicate	<p>Knowledge:</p> <ul style="list-style-type: none"> • on different concentration of nutrient; • effect on the biomass cultivation phase. <p>Competences</p> <ul style="list-style-type: none"> - on cultivation procedure.
Competenze trasversali	<ul style="list-style-type: none"> • Evaluation ability <ul style="list-style-type: none"> ○ The student must demonstrate to have acquired aptitude for scientific reasoning and developed critical skills to evaluate the best option for choosing the more suited biomass. The achievement of this objective will be verified by carrying out discussions in the classroom and during the written/oral examination. • Communication ability <ul style="list-style-type: none"> ○ Acquisition of the correct terminology in the scientific and chemical field, acquisition of exhibition skills characterized by clarity and language properties. The student must be able to correctly expose definitions, fundamental concepts, and theories concerning the contents of the course itself and to discuss clearly the problems presented to him. These skills will be evaluated during the examination. • Self-learning capacity <ul style="list-style-type: none"> ○ Acquisition of the ability to investigate issues and topics related to the teaching discipline in an autonomous way through the consultation of texts, databases, and scientific works available in the library or on the web and to identify the connections with other disciplines of the course of study. The acquisition of this ability will be verified by discussing the topics during the examination.

Valutazione	
Modalità di verifica dell'apprendimento	The student's evaluation criteria include a two-hour written test consisting of answering and discussing four / five bullets covered in the course and questions related to the content of the course.
Criteri di valutazione	<p>In the evaluation of the exam and in the assignment of the final grade, the following items will be taken into consideration:</p> <ol style="list-style-type: none"> 1) the acquired level of knowledge of the course contents (insufficient, superficial, good, complete, excellent); 2) the ability to apply theoretical concepts to applied processes (insufficient, discrete, good, excellent); 3) the capacity for critical analysis and judgment autonomy (fair, good, excellent); 4) clarity of exposition and ownership of language (confused and insecure; clear and correct; excellent and safe); 5) the ability to study in depth individual contents of the course and interdisciplinary links (discreet, good, excellent).
Criteri di misurazione dell'apprendimento e di attribuzione del voto finale	<p>The mark is thirty, with possible praise. Passing the exam implies the achievement of a grade not lower than 18/30 and involves the assignment of the corresponding university educational credits.</p> <p>A necessary condition for passing the exam is to have achieved a non-negative assessment in relation to points 1,2,4.</p> <p>To achieve a score of 30/30 cum laude, the student must have achieved a level of excellence relative to points 1-5.</p>
Altro	