UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Economiche, Aziendali e Statistiche
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	ECONOMICS AND BUSINESS ADMINISTRATION
SUBJECT	PRINCIPLES OF CIRCULAR ECONOMICS
TYPE OF EDUCATIONAL ACTIVITY	C
AMBIT	10675-Attività formative affini o integrative
CODE	19115
SCIENTIFIC SECTOR(S)	ING-IND/11
HEAD PROFESSOR(S)	MILONE DANIELE Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**MILONE DANIELE** Tuesday 10:00 11:30 Dipartimento D.I. Edificio 9 stanza T2004 (2º piano) Viale delle Scienze Wednesday 12:00 13:00 Per la sede di Agrigento durante la pausa prevista, previa prenotazione

DOCENTE: Prof. DANIELE MILONE

PREREQUISITES	Good knowledge of of mathematics
LEARNING OUTCOMES	Knowledge and understanding skills: The student will gain knowledge and understanding on the circular economy, the European directives on the circular economy, the tools for the transition toward the circular economy, as the environmental labels, the industrial symbiosis, the Life Cycle Assessment, the Green Public Procurement, etc. Applications of the understanding and knowledge gained: The student will be able to identify circular economy strategies, to apply tools and models for the transition towards a circular economy. Autonomy in critical judgment: The course will allow the student to comprehend the main problems to face when assessing the optimal solutions for the transition from the linear economy to the circular economy. Communication skills: The lectures and the final examination features aim at the development of the students' communication skills towards all the private and institutional stakeholders. Learning objectives: The student will gain knowledge in the technical-engineering field and will be able to apply the skills acquired during the classes. Furthermore, the student will gain terminologies, languages, mathematical and descriptive methods that characterize the circular economy.
ASSESSMENT METHODS	The exam is based on a single oral test, aimed to verify the level of knowledge and competencies expected for the course; the final grade ranges from 0 to 30. The maximum grade is given if the exam clarifies that the student masters the following three skills: critical and interdisciplinary judgement in the topics of the course; well-developed skills in the understanding of the impacts of the topics of the course in the sector we are considering, a well-developed ability to represent ideas and/or innovative solutions in the context of the discipline. The student will solve modeling and calculation problems and he will also answer questions on the topics studied during the course. The questions, either open or semi-structured and tailored to test the learning results expected will verify: a) learning verification, b) elaboration capabilities, c) verbal capabilities. The minimum number of oral questions during the exam is 3. a)The learning verification by the student will be performed through the analysis of the capability of the student to perform connections between the theoretical and practical contents of the course, b)About the elaboration capabilities of the students, the following skills will be evaluated: b1) perform personal evaluations about the contents of the course; b2) understanding the applications or the implications of the contents in the context of the course; b3) allocate the contents of the course in the professional and technological reference context; b4) capability of reading and critically understanding ocomplex systems. c)In the field of the verbal skills, the student will receive the lowest grade if he/she will show a language skill not completely adequate to the professional context, while the maximum grade will be assigned to the students having a complete understanding and mastery of the technical language skills required. Grades rating Excellent 30 - 30 cum laude: excellent knowledge of the topics, excellent language skills, the student is able to apply knowledge to solve problems. Very good 26-29: good knowledge of the topics of the course, full mastery of language, the student is able to apply knowledge to solve the proposed problems. Good 24-25: basic knowledge of the main topics, basic technical language skills, limited ability to independently apply knowledge to the solution of problems. Sufficient 21-23: the student does not have full capabilities but has the knowledge, sufficient technical language skills, poor ability to independently apply knowledge to problem. Barely sufficient 18-20: the student has minimal knowledge of the course topics and minimal technical language, very little or no ability to independently apply the knowledge. Insufficient: the student does not have an acceptable knowledge of the course topics.
EDUCATIONAL OBJECTIVES	The course aims at giving the necessary knowledge to define strategies for the circular economy, with particular attention to the use of the Life Cycle Assessment methodology, environmental labels systems, Green Public Procurement criteria, mechanisms of industrial symbiosis, in a life-cycle perspective.
TEACHING METHODS	Lectures
SUGGESTED BIBLIOGRAPHY	1) Standard UNI EN 14040, 14044 2) Materiali didattico fornito durante le lezioni 3) L'anello mancante - Piano d'azione dell'Unione europea per l'economia

	circolare 4) Direttive europee sull'economia circolare

SYLLABUS

Hrs	Frontal teaching
1	Introduction to the course
6	The circular economy: introduction and European Directives
7	The role of the production as support for the circular economy
7	The role of consumers as support for the circular economy
7	The role of the end-of-life as support for the circular economy
20	Tools and models for the transition towards a circular economy: environmental labels, Life Cycle Assessment methodology, industrial symbiosis, Green Public Procurement.