

Laurea magistrale in SUSTAINABLE CHEMISTRY AND TECHNOLOGIES FOR CIRCULAR ECONOMY

curriculum RESOURCES AND PRODUCT DESIGN AND RECYCLING

Study programme for students enrolled in the academic year 2023-2024

(per ulteriori informazioni consultare l'[all. 2](#))

1st YEAR		
MANDATORY UNITS	CREDITS	HOURS
CIRCULAR AND SUSTAINABLE WASTE MANAGEMENT	9	LEZ: 72 ore, 9.0 cfu
ECONOMICS FOR THE CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
EUROPEAN UNION ENVIRONMENTAL AND ENERGY LAW	6	LEZ: 48 ore, 6.0 cfu
GREEN CHEMISTRY AND INNOVATIVE CHEMICAL PROCESS	9	LEZ: 56 ore, 7.0 cfu; L: 24 ore, 2.0 cfu
OPERATIONS AND SUPPLY CHAIN MANAGEMENT	6	LEZ: 48 ore, 6.0 cfu
RENEWABLE ENERGY TECHNOLOGIES	6	LEZ: 48 ore, 6.0 cfu
THERMODYNAMICS AND CATALYSIS FOR CIRCULAR ECONOMY (C.I. = MOD. A + MOD. B)	12	
<i>THERMODYNAMICS OF PROCESSES AND MATERIALS (MOD. A)</i>	6	LEZ: 32 ore, 4.0 cfu; ESE: 20 ore, 2.0 cfu
<i>CATALYSIS FOR CIRCULAR ECONOMY (MOD. B)</i>	6	LEZ: 48 ore, 6.0 cfu
WATER RESOURCES MANAGEMENT IN THE CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
2nd YEAR		
MANDATORY UNITS	CREDITS	HOURS
CIRCULARITY IN BIOMASS PRODUCTIONS	6	LEZ: 48 ore, 6.0 cfu
MATERIALS DESIGN AND SELECTION FOR CIRCULAR ECONOMY	9	LEZ: 64 ore, 8.0 cfu; ESE: 12 ore, 1.0 cfu
SUSTAINABLE MATERIALS AND RECYCLING FOR CIRCULAR ECONOMY (C.I. = MOD. A + MOD. B + MOD. C)	18	
<i>SUSTAINABLE MINERAL GEO-RESOURCES AND CRITICAL RAW MATERIALS (CRM) (MOD. A)</i>	6	LEZ: 48 ore, 6.0 cfu
<i>RECYCLING AND TRANSFORMATION OF INORGANIC MATERIALS (MOD. B)</i>	6	LEZ: 48 ore, 6.0 cfu
<i>NEW PLASTICS ECONOMY: POLYMERS, BIOPOLYMERS AND THEIR RECYCLING (MOD. C)</i>	6	LEZ: 48 ore, 6.0 cfu
12 ADDITIONAL FREE-CHOISE CREDITS AMONG THE FOLLOWING:		
HEALTH AND ENVIRONMENT IN CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
PSYCHOLOGY, POLICY MAKING AND EDUCATION TO A CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
SYNTHETIC BIOTECHNOLOGY	6	LEZ: 48 ore, 6.0 cfu
UNDERSTANDING STATISTICS OF CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
OPTIONAL UNIT	CREDITS	HOURS
CIRCULAR ECONOMY SUMMER SCHOOL	5	ALT: 40 ore, 5.0 cfu
FINAL EXAM	15	PRF: 999 ore, 15.0 cfu

HOUR LEGEND:

LEZ = lessons

ESE = exercises

L = laboratories

Laurea magistrale in SUSTAINABLE CHEMISTRY AND TECHNOLOGIES FOR CIRCULAR ECONOMY

curriculum ENERGY CONVERSION AND STORAGE

Study programme for students enrolled in the academic year 2023-2024

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1st YEAR		
MANDATORY UNITS	CREDITS	HOURS
CIRCULAR AND SUSTAINABLE WASTE MANAGEMENT	9	LEZ: 72 ore, 9.0 cfu
ECONOMICS FOR THE CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
EUROPEAN UNION ENVIRONMENTAL AND ENERGY LAW	6	LEZ: 48 ore, 6.0 cfu
GREEN CHEMISTRY AND INNOVATIVE CHEMICAL PROCESS	9	LEZ: 56 ore, 7.0 cfu; L: 24 ore, 2.0 cfu
OPERATIONS AND SUPPLY CHAIN MANAGEMENT	6	LEZ: 48 ore, 6.0 cfu
RENEWABLE ENERGY TECHNOLOGIES	6	LEZ: 48 ore, 6.0 cfu
THERMODYNAMICS AND CATALYSIS FOR CIRCULAR ECONOMY (C.I. = MOD. A + MOD. B)	12	
THERMODYNAMICS OF PROCESSES AND MATERIALS (MOD. A)	6	LEZ: 32 ore, 4.0 cfu; ESE: 20 ore, 2.0 cfu
CATALYSIS FOR CIRCULAR ECONOMY (MOD. B)	6	LEZ: 48 ore, 6.0 cfu
WATER RESOURCES MANAGEMENT IN THE CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
2nd YEAR		
MANDATORY UNITS	CREDITS	HOURS
BIOREFINERIES AND SUSTAINABLE ENERGY PRODUCTION AND STORAGE FOR CIRCULAR ECONOMY	15	LEZ: 120 ore, 15.0 cfu
LIFE CYCLE ASSESSMENT	6	LEZ: 48 ore, 6.0 cfu
SUSTAINABILITY STRATEGIES AND ENERGY ECONOMICS (C.I. = MOD. A + MOD. B)	12	
SUSTAINABILITY STRATEGIES AND INNOVATION MANAGEMENT FOR CIRCULAR ECONOMY (MOD. A)	6	LEZ: 48 ore, 6.0 cfu
ENERGY ECONOMICS (MOD. B)	6	LEZ: 48 ore, 6.0 cfu
12 ADDITIONAL FREE-CHOISE CREDITS AMONG THE FOLLOWING:		
HEALTH AND ENVIRONMENT IN CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
PSYCHOLOGY, POLICY MAKING AND EDUCATION TO A CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
SYNTHETIC BIOTECHNOLOGY	6	LEZ: 48 ore, 6.0 cfu
UNDERSTANDING STATISTICS OF CIRCULAR ECONOMY	6	LEZ: 48 ore, 6.0 cfu
OPTIONAL UNIT	CREDITS	HOURS
CIRCULAR ECONOMY SUMMER SCHOOL	5	ALT: 40 ore, 5.0 cfu
FINAL EXAM	15	PRF: 999 ore, 15.0 cfu

HOUR LEGEND:

LEZ = lessons

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