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European Regional Development Fund - Instrument for Pre-Accession II Fund
AMOCEAB

AMOCEAB MASTER PROGRAM

Master on Circular Economy and Bioeconomy

This Master, focused on the themes of **Circular Economy and Bioeconomy**, is designed for those who wish to acquire advanced knowledge in the field of **ecological transition and sustainability**. The program welcomes **three-year graduates in the Engineering or Economics area**, interested in developing a solid knowledge to face the current challenges in the Circular Economy and Bioeconomy sector. Through a combination of **frontal teaching and practical activities (laboratories)**, the participants will acquire the necessary skills and operational tools to support companies in **managing sustainability and circular economy processes** with initial interdisciplinary engineering-management training and subsequent specialized courses based on specific topics of interest. This path will enable organizations to invest in professionals capable of responding to the needs of the changed competitive scenario and managing the changes taking place in the best possible way. The master's degree includes an exchange period **abroad of at least 6 months in the universities of the Adriatic-Ionian area**, where all the lessons and activities will take place.

Language:
English

Period:
2 Years

University training credits issued:
120 ECTS

Access method:
Free access

Type of Master's degree:
First level Master
+Joint Master Program

The Master will be held in the following locations:

- Polytechnic University of Marche (UNIVPM),
- Alma Mater Studiorum – University of Bologna (UNIBO)
- Special Research Funds Account of Technical University of Crete (TUC)
- Agricultural University of Tirana (UBT)
- University of Sarejevo (UNSA)6 School of Advanced Social Studies in Nova Gorica (FUDŠ/SASS)
- University of Zagreb (FFTB UNIZG)
- Faculty of Technology and Metallurgy, University of Belgrade, Republic of Serbia (FTM-UB).

Method of attendance: The Master includes attendance at frontal teaching and practical activities (laboratories) with a period abroad of at least 6 months and the possibility of exchange with universities in the Adriatic-Ionian area.

Access method: Free access

Access requirements: Admission to the Master is reserved to those who hold three-year degrees in the Engineering or Economics area.

For more information contact:

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Master on Circular Economy and Bioeconomy

SECOND YEAR - SPECIALISATION: CIRCULAR SERVICES AND TECHNOLOGIES FOR SUSTAINABLE CITIES AND REGIONS

SECOND YEAR - SPECIALISATION: CIRCULAR FOOD CHAIN AND INDUSTRIAL BIOTECHS

SECOND YEAR - SPECIALISATION: GREEN INDUSTRIAL PRODUCTION, SYMBIOSIS AND CYBER-PHYSICAL SYSTEMS

1 ENGINEERING PROGRAM

THE FIRST SEMESTER IS COMMON BY THE TWO PROGRAMS

2 BUSINESS PROGRAM

SECOND YEAR

ENGINEERING PROGRAM

FIRST YEAR (the first semester is shared by the two programs)				
	Teaching	**CFU**	**CFU tot**	**Place**
Common teaching courses	Circular Economy: process basics and engineering implications (sustainable and circular by design)	6	12	UNIVPM
	Sustainability management	6		
	Data analytics (Machine learning and Artificial intelligence) for Circular economy and bioeconomy	6	6	UNIVPM
	Environmental risks and ecotoxicological aspects	6	12	UNIVPM
	Sustainable solutions and technologies for urban, industrial and natural systems	6		
	Sustainability control and assessment for circular economy and bioeconomy (LCA)	6	6	UNIVPM

Selection of four of the following topics (24 CFU total)			
Teaching	**CFU**	**CFU tot**	**Place**
Assessment of the impact of technological processes on the environment	6	24	UNIVPM
Green Chemistry (in circular economy and bioeconomy industries)	6		
Sustainable resources management and safe recycling	6		
Advanced and ecofriendly (circular and biobased) materials	6		
Circular processes and chemical-environmental plants	6		
Biotechnology introduction and circular applications	6		
Sustainable Energy solutions for circular economy	6		
TOTAL		**60**	

SECOND YEAR - SPECIALISATION: CIRCULAR SERVICES AND TECHNOLOGIES FOR SUSTAINABLE CITIES AND REGIONS

Teaching	CFU	CFU tot	Place
Climate change and service system for biodiversity and ecosystems	6	24	FTM-UB/UNIVPM
Waste valorisation and resource recovery (UNIBELG)	6		
Wastewater treatment and water reuse (UNIBELG)	6		
Optimization of chemical and environmental plants (UNIVPM)	6		
Two of the following topics (12 CFU total)			
Environmental hydraulics and sustainable water infrastructure	6	12	FTM-UB/UNIVPM
Biocomposite materials for a more sustainable enviroment	6		
Hydraulics of agroforestry systems	6		
Irrigation systems	6		
Modelling urban water cycles	6		
Equipment design in environmntal protection	6		
Material process integration and circular economy	6		
Quality management in industry	6		
Internship		6	
Thesis		18	
TOTAL		**60**	

SECOND YEAR - SPECIALISATION: CIRCULAR FOOD CHAIN AND INDUSTRIAL BIOTECHS

Teaching	CFU	CFU tot	Place
Innovative bioconversion concepts for food processing in circular bioeconomy	6	24	UNIZG/UNIBO
Industrial and environmental biotech - valorisation of food/organic waste	6		
Physiology of Biocatalysts and Metabolic Engineering for Biocatalyst Robustness	6		
Biotechnological production from renewable feedstocks	6		
Two of the following topics (12 CFU total)			
Digital biotechnology and bioinformatics	6	12	UNIZG/UNIBO
Production of biopharmaceuticals and good manufacturing practices in pharmaceutical industry	6		
Advanced sustainable food technologies and processes	6		
Food processes and environmental impact	6		
Internship		6	
Thesis		18	
TOTAL		**60**	

SECOND YEAR - SPECIALISATION: GREEN INDUSTRIAL PRODUCTION, SYMBIOSIS AND CYBER-PHYSICAL SYSTEMS

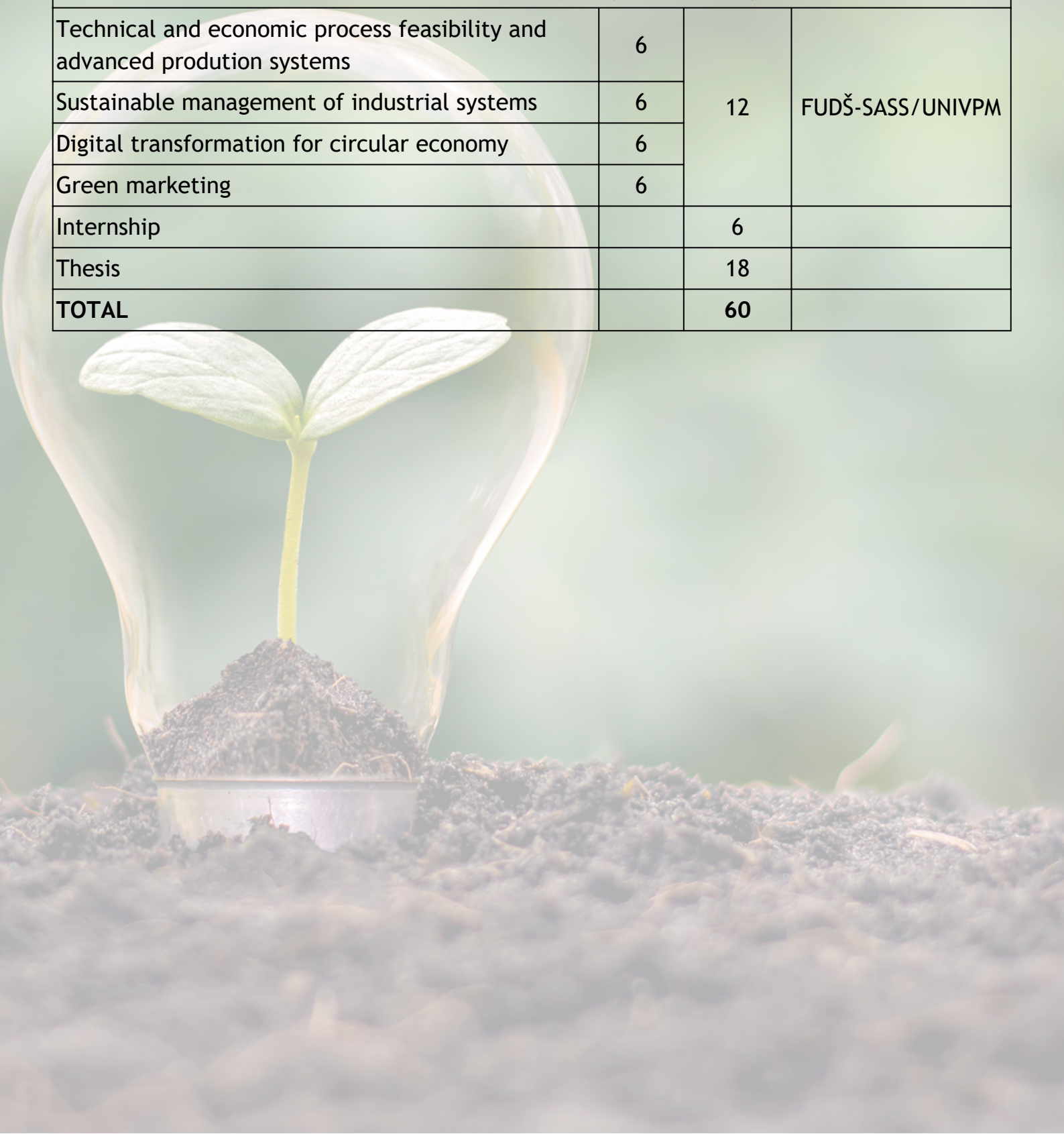
Teaching	CFU	CFU tot	Place
Principles of Mass Transfer and Separation Processes	6	24	UNSA/TUC
Cleaner production	6		
Sustainability and digitalization in value chain	6		
Advanced process enginering and cyber physiscal systems simulations	6		
Two of the following topics (12 CFU total)			
Business intelligence and data analytics in industrial environments	6	12	UNSA/TUC
Air quality management	6		
Introduction to computational fluidodynamics (UNISARA)	6		
Measuring environmental sustainability	6		
Waste heat recovery technologies (UNISARA)	6		
Internship		6	
Thesis		18	
TOTAL		**60**	

BUSINESS PROGRAM

FIRST YEAR (the first semester is shared by the two programs)				
	Teaching	**CFU**	**CFU tot**	**Place**
Common teaching courses	Circular Economy: process basics and engineering implications (sustainable and circular by design)	6	12	UNIVPM
	Sustainability management	6		
	Data analytics (Machine learning and Artificial intelligence) for Circular economy and bioeconomy	6	6	UNIVPM
	Environmental risks and ecotoxicological aspects	6	12	UNIVPM
	Sustainable solutions and technologies for urban, industrial and natural systems	6		
	Sustainability control and assessment for circular economy and bioeconomy (LCA)	6	6	UNIVPM

Selection of four of the following topics (24 CFU total)			
Teaching	**CFU**	**CFU tot**	**Place**
Sustainability finance	6	24	UNIVPM
Environmental accounting	6		
Sustainable supply chain management	6		
Sustinable investing and cost-benefit analysis	6		
Environmental law	6		
Social impact analysis and stakeholder engagement	6		
Sustinable corporate governance	6		
Energy law	6		
Sustainable business models	6		
Circular economy and food system	6		
Analysis of public policyes and rural development	6		
TOTAL		**60**	

SECOND YEAR			
Teaching	**CFU**	**CFU tot**	**Place**
Sustainability management and control	6	24	FUDŠ-SASS/UNIVPM
Sustainability reporting and assurance	6		
Business Ethics and Sustainable Development	6		
Innovation management or Economic and business culture	6		
Two of the following topics (12 CFU total)			
Technical and economic process feasibility and advanced prodution systems	6	12	FUDŠ-SASS/UNIVPM
Sustainable management of industrial systems	6		
Digital transformation for circular economy	6		
Green marketing	6		
Internship		6	
Thesis		18	
TOTAL		**60**	



Project Partners:

UNIVERSITÀ POLITECNICA DELLE MARCHE

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

UBT

SASS
SCHOOL OF ADVANCED SOCIAL STUDIES

faculty of food technology and biotechnology
University of Zagreb

Faculty of Technology and Metallurgy
University of Belgrade

PRIVREDNA/GOSPODARSKA KOMORA FEDERACIJE BOSNE I HERCEGOVINE
CHAMBER OF ECONOMY OF THE FEDERATION OF BOSNIA AND HERZEGOVINA

CNA Emilia-Romagna