TITOLO:

Master Universitario di Il livello

BIOECONOMY IN THE CIRCULAR ECONOMY

## N.B. Le celle in grigio sono a compilazione automatica e non vanno modificate

INSEGNAMENTI											MODULI DIDATTICI (EVENTUALI)				COPERTURA INSEGNAMENTI							
codice (segreteria)	denominazione insegnamenti in lingua italiana e <u>in lingua inglese</u>	CFU (1)	settore scientifico- disciplinare <mark>(2)</mark>	ore di attività <mark>(3)</mark>	responsabile insegnamento (4)	tipo di verifica <mark>(5)</mark>	valutazione verifica <mark>(6)</mark>	sintesi obiettivi formativi (7)	sintesi contenuti (8)	denominazione moduli (9)	CFU (10)	settore scientifico- disciplinare (11)	ore di attività <mark>(12)</mark>	forma didattica (13)	ore di attività (14)	tipo di copertura (15)	nome docente o "bando" (16)	settore scientifico- disciplinare (17)	Dipartimento o altro Ateneo o Ente di appartenenza (19)			
	1													Frontale	Frontale :		da definire					
			1											FRONTALE	2	INTERNA	MAURIZIO CASIRAGHI	BIO/05	BIOTECNOLOGIE E BIOSCIENZE			
			1					Participants will be provided with updated knowledge about	Scientific and technological advances in next generation					FRONTALE	2	INTERNA	MARCO VANONI/ELENA SACCO	BIO/10	BIOTECNOLOGIE E BIOSCIENZE			
			1		RAOLA			advanced technologies useful in bioeconomy, in particular "omic"	sequencing, transcriptomics, proteomics and systems biology.					FRONTALE	2	INTERNA	MARINA LOTTI	BIO/10	BIOTECNOLOGIE E BIOSCIENZE			
	SCIENCE 1	3	CHIM/11	24	BRABNDUARDI/ MASSIMO	ORALE	30	techniques, synthetic biology and nanotechnology. The principal	Application of advanced biotechnology to the production of		3	CHIM/11	24	FRONTALE	2	INTERNA	PAOLA BRANDUARDI	CHIM/11	BIOTECNOLOGIE E BIOSCIENZE			
	(MILANO-BICOCCA)				LABRA/DANILO PORRO			components of the whole production chain will be described	metabolites, chemicals and novel biocatalysts. Case studies on the					FRONTALE	2	INTERNA	DANILO PORRO	CHIM/11	BIOTECNOLOGIE E BIOSCIENZE			
			1					and analyzed, thus identifying technological needs and benefits	valorization of lignocellulose and waste materials into novel high- added value chains will be described.					FRONTALE	4	INTERNA	MASSIMO LABRA	BIO/01	BIOTECNOLOGIE E BIOSCIENZE			
			1					arising from the paradigm shift to circular economy.						SEMINARIO	2	ESTERNA	MARIO BONACCORSO		ASSOBIOTECH			
			1											FRONTALE	2	INTERNA	DAVIDE PROSPERI	BIO/10	BIOTECNOLOGIE E BIOSCIENZE			
		<u> </u>	ļ'	<u> </u>						<b> </b>	<u> </u> '		<u> </u>	SEMINARIO	4	ESTERNA	DA DEFINIRE	╡────	INTESA SAN PAOLO			
								The economics of sustainability and	Special attention will be paid to the market needs and EU strategies					FRONTALE	2	INTERNA	LUCIA VISCONTI PARISIO	SECS-P/03	DEMS			
	ECONOMY 1 (MILANO-BICOCCA)	2	SECS-	16	LUCIA VISCONTI	ORAL F	30	the circular economy: market failures and State intervention through regulation, taxes and other market instruments. Furthrmnore, All information needed to understand mechanisms behind a long lasting successful technology	novel production chains respond to. Examples of technological and business acceleration will be provided through business models and innovative start ups within the Alimenta PTP's certified incubator. Project Management aspects will be addressed as well.		2	SECS-P/03	16	FRONTALE	2	INTERNA	LUCIA VISCONTI PARISIO	SECS-P/03	DEMS			
			P/03		PARISIO									FRONTALE	8	INTERNA	SALVATORETORRISI	SECS-P/08	DEMS			
								transfer will be provided.						FRONTALE	4	INTERNA	SALVATORETORRISI	SECS-P/08	DEMS			
								Aim of the module is to provide updates regarding advanced technologies of industrial applications of enzyme catalysts and microbial cells as "cell factories". The activities are focused on: i) the use of enzymes as additives and processes ancillaries for the production of	The course is organized in two sections. The first section focuses on scientific and technological issues regarding the potential of biotechnological processes based on enzyme systems and wildtype or recombinant microorganisms. Methodologies to improve biocatalyst systems are presented					FRONTALE	3	ESTERNA	DARIA MARIA MONTI	BIO/10	UNIVERSITA' NAPOLI FEDERICO II			
														SEMINARIO	3	ESTERNA	MARCO MORACCI		UNIVERSITA' NAPOLI FEDERICO II			
														FRONTALE	2	ESTERNA	MARTINO DI SERIO	BIO/10	UNIVERSITA' NAPOLI FEDERICO II			
				24		ORALE							24	FRONTALE	2	ESTERNA	CINZIA PEZZELLA	CHIM/11	UNIVERSITA' NAPOLI FEDERICO II			
	SCIENCE 2	3	BIO/11		GIOVANNI SANNIA		30				3	BIO/11		FRONTALE	2	ESTERNA	CHIARA SCHIRALDI	BIO/10	UNIVERSITA' NAPOLI FEDERICO II			
	(UNINAPOLI)		l					products of industrial interest; ii) the use of advanced methods of						FRONTALE	4	ESTERNA	ANTONIO MARZOCCHELLA	ING-IND/25	UNIVERSITA' NAPOLI FEDERICO II			
			ĺ					microorganism engineering to improve production performances; iii) the strategies to optimize the	and discussed. Industrial case studies are presented.					SEMINARIO	4	ESTERNA	PIERO SALATINO		GFBIOCHEMICALS			
								exploitation of the productive potential of the microorganisms.						SEMINARIO	2	ESTERNA	VITO GRASSI		ZOETIS			
														SEMINARIO	2	ESTERNA	VINCENZO LETTERA		ΒΙΟΡΟΧ			
								The module will deal also with recognition and analysis of the	During the course, the essentials					FRONTALE	6	ESTERNA	ROBERTO VONA	SECS-P/08	UNIVERSITA' NAPOLI FEDERICO II			
	ECONOMY 2		SECS-	16			20	opportunities available for a new venture, focusing in particular on the research entrepreneurial initiatives (academic and not)	management of new research entrepreneurial initiatives will be presented. As well as the				16	SEMINARIO	4	ESTERNA	NADIA DI PAOLA		UNIVERSITA' NAPOLI FEDERICO II			
	(UNI NAPOLI)	2	P/08	10	NADIA DI PAOLA	ORALE	30	aimed at commercializing the research outcomes. The aim of the course is to equip learners with the theoretical and practical tools for	business initiatives. Thanks to the tools provided, learners will be able to model a business idea and to		2	SECS-P/06	10	SEMINARIO	5	ESTERNA	SILVIA COSIMATO		UNIVERSITA' NAPOLI FEDERICO II			
								theoretical and practical tools for the recognition and structuring of innovative business ideas.					SEMINARIO	1	ESTERNA	AMEDEO LEPORE		UNIVERSITA' DELLA CAMPANIA LUIGI VANVITELLI				

## Firma del proponente del corso:

							The module aims to update participants on new regulations on	The module aims to update					FRONTALE	6	ESTERNA	GIOVANNA C.VARESE	BIO/02	UNIVERSITA' TORINO
								international regulations governing access to genetic resources and the fair and equitable sharing of benefits derived from them in the event of commercial exploitation. In the second part of the scientific module the exploitation of by- products of the processing industry as a crucial step to the sustainability of supply chains will					SEMINARIO	2	ESTERNA	VALERIO BOMBARDELLI		INDENA SPA
SCIENCE 3 (UNI TORINO)	2	BIO/02	16	GIOVANNA CRISTINA VARESE	ORALE	30	access to genetic resources and the possible sharing of the benefits derived from them. It will also present some examples of			2	BIO/02	16	FRONTALE	4	ESTERNA	BARBARA DAL BELLO	AGR/15	UNIVERSITA' TORINO
							valorization of the processing industry by-products.						FRONTALE	2	ESTERNA	GIUSEPPE ZEPPA	AGR/15	UNIVERSITA' TORINO
								be addressed. Some industrial case studies will be presented.				24	FRONTALE	2	ESTERNA	AMEDEO RAYNERI	AGR/02	UNIVERSITA' TORINO
								During the course different figures of investors will be presented					FRONTALE	6	ESTERNA	ROBERTO SCHIESARI	SECS-P/09	UNIVERSITA' TORINO
							The educational objective of the teaching is to present actors of the capital market operating in inpovative projects funding and to	evidences and cases. Beside it will be presented how to approach to		3			SEMINARIO	7	ESTERNA	CLAUDIA PESCITELLI		2i3T INCUBATORE UNIVERSITA' TORINO
ECONOMY 3 (UNI TORINO)	3	SECS- P/09	24	ROBERTO SCHIESARI	ORALE	30	provide communication tools to succeed in new businesses; furthermore the module provides an	n n n n n n n n n n n n n n n n n n n			SECS-P/09		SEMINARIO	3	ESTERNA	GIUSEPPE SERRAO		2i3T INCUBATORE UNIVERSITA' TORINO
							illustration of the principles and operation of Economic – financial and sustainability report.						FRONTALE	4	ESTERNA	ALAIN DEVALLE	SECS-P/07	UNIVERSITA' TORINO
													FRONTALE	4	ESTERNA	RICCARDO BELTRAMO	SECS-P/13	UNIVERSITA' TORINO
							The module aim is to provide students with basic knowledge of industrial biotechnological process design, including elements of bioreactors, downstream processing and principles of bioreactors scale-up. Cutting-edge biotechnological approaches used for the production of functional foods and food ingredients, such as probiotics, prebiotics, nutraceutics and enzymes will be provided. The students will also be exposed to the principles of biotechnology-based genetic improvement of crop species. Furthermore, the course will provide an overview on the marine and terrestrial microorganisms of interest for the biodegradation of organic pollutants and the production of bio-based products for environmental/industrial applications, and on the marin	Material balance, design and scale- up of bioreactors. Main unit				FRONTALE	5	ESTERNA	GIULIO ZANAROLI	CHIM/11	UNIVERSITA' BOLOGNA	
								operations involved in downstream processing. Use of process simulators for biotech process					FRONTALE	3	ESTERNA	NOURA RADDADI	AGR/16	UNIVERSITA' BOLOGNA
								human gut microbiota to identify microbial candidates for the development of probiotics and	antify the FRONT and FRONT	FRONTALE	3	ESTERNA	DAVIDE PINELLI DARIO FRASCARI	ING-IND/25	UNIVERSITA' BOLOGNA			
SCIENCE 4	3	ACR/01	24			30		prebiotics. Biotechnological production of nutraceuticals. Introduction to plant breeding with emphasis on biotechnological		3	ACR/01	24	FRONTALE	3	ESTERNA	CRISTIANA BOI	ING-IND/24	UNIVERSITA' BOLOGNA
(UNI BOLOGNA)		AGIVUT	24			50		approaches (marker-assisted selection - MAS -, genetic engineering, genome editing).			AGIVUT	24	FRONTALE	2	ESTERNA	ALESSANDRO TUGNOLI	ING-IND/25	UNIVERSITA' BOLOGNA
								Microbiological and technological aspects related to the bioremediation of soils and sediments and the treatment of industrial wastewaters. Biosurfactants, enzymes and bioactive compounds produced by f					FRONTALE	2	ESTERNA	MARCO CANDELA	CHIM/11	UNIVERSITA' BOLOGNA
													FRONTALE	3	ESTERNA	PATRIZIA BRIGIDI	CHIM/11	UNIVERSITA' BOLOGNA
							contaminated sites and the treatment of industrial effluents.	applications.					FRONTALE	3	ESTERNA	SILVIO SALVI	AGR/07	UNIVERSITA' BOLOGNA
							A further goal of the course is to	Main characteristics of the supply of raw materials in the bioeconomy. Description of annual and perennial biomass crops: limits and					FRONTALE	3	ESTERNA	ANDREA MONTI	AGR/02	UNIVERSITA' BOLOGNA
ECONOMY 4			10		0.0041.5		describe the economic characteristics and related technical bases of primary production of raw materials for the	opportunities for their development in fertile and marginal lands. Main characteristics of the demand of										UNIVERSITA'
(UNI BOLOGNA)	2	CHIM/11	16	PATRIZIA BRIGIDI	ORALE	30	bioeconomy. It includes the ability of understanding essential economic statistics and the	raw materials in the bioeconomy. Market structures. Forms of integration and organization:		2	CHIM/11	16			ESTERNA		AGR/01	BOLOGNA
							sector to markets and policies.	international markets. Bioeconomy policies. Specificity of the concept of efficiency and of the mechanisms of innovation.					SEMINARIO	6	ESTERNA	DA DEFINIRE		INTESA SAN PAOLO
TOTALE ORE/CFU (escluso stage)	20		160							20		160		158				
STAGE	30		750							30		750		750				
PROVA FINALE (20)	10									10								

Firma del proponente del corso:

TOTALE ORE/CFU	60		910					60	910	908
 ORGANIZ	747100			CORSO		1				
E' PREVISTA LA PRESENZA IN	AULA D	UTUTOR?				NO				

Firma del proponente del corso: