VERBALE DEL CONSIGLIO
DELLA SCUOLA DI DOTTORATO DEL POLITECNICO DI BARI

Seduta n. 4/2023 ***del 10/5/2023***

Il giorno 10/5/2023 alle ore 11:30, a seguito di convocazione d'urgenza del 3/5/2023, si è riunito in modalità telematica il Consiglio della Scuola di Dottorato del Politecnico di Bari, per discutere il seguente

ORDINE DEL GIORNO

P.1) Comunicazioni del Direttore
P.2) Iniziativa Coaching for Doc
P.3) Affidamenti e insegnamenti
P.4) Varie

Sono presenti:

n	Nome e Cognome	Titolo	Presente	Assente Giustificato	Assente
1	Alfredo Grieco	Direttore Scu.Do. - Rappresentante DEI	X		
2	Giuseppe Pascazio	Pro Rettore	X (sino alle 12:22)		
3	Francesco Defilippis	Rappresentante DArCoD	X		
4	Antonio Messeni Petruzzelli	Rappresentante DMMM		X	
5	Gabriella Pugliese	Rappresentante DIF	X		
6	Michele Notarnicola	Rappresentante DICATECh		X	
7	Mario Carpentieri	Coordinatore di Dottorato DRIEI	X		
8	Giuseppe Casalino	Coordinatore di Dottorato DRIMEG	X		
9	Vito Iacobellis	Coordinatore di Dottorato DRSATE	X		
10	Caterina Ciminelli	Coordinatore di Dottorato DRI 4.0		X	
11	Marco Donato de Tullio	Coordinatore di Dottorato DRISA	X		
12	Mario Daniele Piccioni	Coordinatore di Dottorato DRISS	X		
13	Mariagrazia Dotoli	Coordinatore di Dottorato DAUSY	X		
14	Giuseppe Fallacara	Coordinatore di Dottorato CTI	X		
15	Tania Leone	Rappresentante Dottorandi		X	
16	Antonio Pavone	Rappresentante Dottorandi		X	

Sono presenti anche i Proff. Ilaria Giannoccaro e Antonello Uva, in qualità di potenziali Coordinatori di Corsi di Dottorato in fase di istituzione.

Alle ore 11:34, il direttore, accertata la presenza del numero legale dei componenti, dichiara aperti i lavori del Consiglio. Viene nominato segretario il prof. de Tullio.

P.1) Comunicazioni del direttore

Il Direttore comunica che:

- la convocazione d'urgenza è motivata dall'esigenza di aggiornare e/o integrare l'offerta formativa per l'Anno Accademico 2023/24 in tempo utile per consentire ai Coordinatori di finalizzare le schede di accreditamento dei Corsi di Dottorato.
- A partire da giugno programmeremo l'offerta didattica per gli Anni Accademici 2024/2025 e 2025/2026.

P.2) Iniziativa Coaching for Doc

Su sollecitazione del Prof. Pascazio, il Direttore della SCUDO segnala l'evento di orientamento al lavoro "Coaching for Doc", dedicato a dottorandi e dottori di ricerca. L'evento è organizzato da Fondazione Emblema in collaborazione con ADI. Quest'anno, l'evento sarà realizzato in partnership con Leonardo e si svolgerà presso il PoliBA nei giorni 16 e 17 maggio 2023.
Data la rilevanza dell'evento, e per favorire la partecipazione di dottorandi e dottori di ricerca, il Prof. Pascazio auspica che la diffusione e l'invito all'evento arrivi anche dalla SCUDO e che, in accordo con il Regolamento didattico SCUDO, si conceda ai partecipanti il riconoscimento di 2 CFU (come "soft skills").

- La SCUDO approva all'unanimità la proposta del Prof. Pascazio.

Il Prof. Casalino e la Prof.ssa Dotoli raccomandano di evidenziare nel materiale informativo dell'evento il coinvolgimento della SCUDO.

P. 3) Affidamenti e insegnamenti

- In risposta all'avviso bandito con D.R. n. 277/2023, è stata ricevuta la candidatura di **Roberto Vittori** relativa all'insegnamento "Space Economy: past, present, future", SSD ING-IND/35 (2 CFU).
    - Il Consiglio della SCUDO, valutata la candidatura ricevuta, delibera all'unanimità che la stessa sia positivamente accolta.
- In risposta all'avviso bandito con D.R. n. 394/2023 sono state ricevute le seguenti candidature:
    - Institutions of spaceflight, ING-INF/01, 2 CFU: **Francesco Santoro**.
        - Il Consiglio della SCUDO, valutata la candidatura ricevuta, delibera all'unanimità che la stessa sia positivamente accolta.
    - Lab on a chip: microfabrication, applications at the point-of-care and industrial exploitation, ING-INF/01, 2 CFU: **Francesco Ferrara.**
        - Il Consiglio della SCUDO, valutata la candidatura ricevuta, delibera all'unanimità che la stessa sia positivamente accolta.

- Il Direttore presenta l'elenco degli insegnamenti (Tabella 1) già approvati dalla SCUDO per l'Anno Accademico 2023/24 e chiede se vi siano modifiche da apportare. I Proff. Piccioni, Dotoli, Fallacara e Iacobellis chiedono di poter produrre eventuali emendamenti e/o integrazioni

in futuro. Il Direttore proporrà nuovamente il punto nella prossima convocazione per accogliere nuove richieste.

TITOLO	**SSD**	**CFU**	**COLLEGIO PROPONENTE**
Antenna technology for 5G communications: propagation arrays and integration	ING- INF/02	2 CFU	DRIEI
Green Photonics	ING-INF/02	2 CFU	DRIEI
Video Compression	ING-INF/03	2 CFU	DRIEI
Supervision and monitoring of renewable energy systems	ING-IND/31	2 CFU	DRIEI
Non-integer order systems and controllers	ING-INF/04	2 CFU	DRIEI
Reasoning on the Web of Data	ING-INF/05	2 CFU	DRIEI
Deep Neural Networks	ING-INF/05	2 CFU	DRIEI
Matlab Recipes for Measurement Data Acquisition and Processing	ING-INF/07	2 CFU	DRIEI
Innovative Models Optimization Strategies and Services for Smart Buildings and Smart Mobility systems	ING-INF/04	2 CFU	DRIEI
Multi-energy and configuration of microgrids: planning management and control	ING- IND/33	2 CFU	DRIEI
Physical layer security	ING-INF/02	2 CFU	DRI4.0
Environmental data analysis	INF/01	2 CFU	DRI4.0
Xtended Realities for Industry 4.0	ING-IND/15	2 CFU	DRI4.0
Emerging methodologies and technologies for Cyber Security	ING-INF/03	2 CFU	DRI4.0
Fundamentals of Industrial Internet of Things	ING-INF/03	2 CFU	DRI4.0
Embedded system design for Industry 4.0	ING-INF/01	2 CFU	DRI4.0
Electronic Information and Industrial Bioengineering	ING-INF/06	2 CFU	DRI4.0
Advanced nanomaterials: properties and applications	CHIM/02	1 CFU	DRI4.0
Flexible and Stretchable Electronics	ING-INF/01	2 CFU	DRI4.0
Complex Networks: Big Data modelling and learning	FIS/07	2 CFU	DRI4.0
Lab-and-field data acquisition and analysis for studying Hydraulic Processes	ICAR/01	2 CFU	DRSATE
Statistical data analysis starting from the highway engineering case	ICAR/04	2 CFU	DRSATE

Sustainable Mobility and Shared Mobility in a Smart Cities framework: optimization models and applications	ICAR/05	2 CFU	DRSATE
Advances in Geomatic Engineering	ICAR/06	2 CFU	DRSATE
The importance of Suction in Soil Mechanics: its measurement and application	ICAR/07	1 CFU	DRSATE
Adaptive technologies for the Mitigation of Urban Heat Island and Climate Change Effects	ICAR/10	2 CFU	DRSATE
Multi-criteria approaches applied to multi-risk analysis	ICAR/09-10	2 CFU	DRSATE
The 3d printing technology in the construction processes	ICAR/09-10	2 CFU	DRSATE
How to build an ontology that lasts for design matters	ICAR/20	3CFU	DRSATE
Introduction to Partial Differential Equations with Applications	MAT/05	2 CFU	DRIMeG
Advanced Opto-Acoustics Methods for Experimental Mechanics	ING-IND/14	2 CFU	DRIMeG
Conservation laws in continuum mechanics and traffic modeling	MAT/05	2 CFU	DRIMeG
Lean_production_digital_factory	ING-IND/17	2 CFU	DRIMeG
Fundamentals of Lasers	ING-IND/14	2 CFU	DRIMeG
Hydrogen towards a global decarbonisation	ING-IND/08	2 CFU	DRIMeG
Mechano-biological Tools for Orthopedic Biomaterials	ING-IND/15	2 CFU	DRIMeG
Combustion Processes and Pollutant Emissions	ING-IND/08-09	2 CFU	DRIMeG
FEM Multiphysics Modelling	ING-IND/16	2 CFU	DRIMeG
High-energy particle physics detectors in space	FIS/01	2 CFU	DRISA
Oscillations and waves	FIS/01	2 CFU	DRISA
Optical communications for space	ING-INF/02	2 CFU	DRISA
Spacecraft Structural Dynamics & Loads	ING-IND/04	2 CFU	DRISA
Fundamentals of surface roughness analysis for tribology	ING-IND/13	2 CFU	DRISA
Compressible Turbulence: Phenomenology and Modeling	ING-IND/06	2 CFU	DRISA
Theories and methods in structural design: modeling and experimental issues	ICAR/08	2 CFU	DRICIPP

Generative Algorithms: digital tools for parametric design and assessment of structures	ICAR/09	2 CFU	DRICIPP
Contextual Design and Heritage: identity and material culture of the territories	ICAR/13	2 CFU	DRICIPP
Theories and methods of design for the Antique	ICAR/14	2 CFU	DRICIPP
Theory of Contemporary Architectural Research	ICAR/14	2 CFU	DRICIPP
Theories and Methods of the Project for the City	ICAR/14	2 CFU	DRICIPP
Theories and Methods of the Project for the Territory	ICAR/21	2 CFU	DRICIPP
The post-growth paradigm in planning research	ICAR/21	2 CFU	DRICIPP
Problems and methods of contemporary restoration	ICAR/19	2 CFU	DRICIPP

Tabella 1.

Il Direttore propone che siano attivati i seguenti ulteriori insegnamenti a supporto dell'istituendo Corso di Dottorato in Ingegneria Gestionale (Tabella 2).

Denominazione dell'insegnamento	**Anno di riferimento**	**Numero di ore**	**Descrizione del corso (max 2000 caratteri)**	**SSD**
Management and Business Research	primo anno	20	This course aims to introduce PhD students to a scientific approach to the study of management and business issues. The focus is on equipping students with the fundamental knowledge and skills for undertaking research in management and business and to critically evaluate research conducted by others. The course is divided into four interrelated segments: problem formulation/conceptualisation, implementation, analysis, publication, and communication of research findings. Ethic issues will be further discussed.	ING-IND/35
From qualitative to quantitative methods in business research	primo anno	20	The aim of the course is to provide PhD students with a set of building blocks for conducting, at the academic level, both quantitative and qualitative research in the areas of management, economics, and policy. As quantitative research, the course addresses three main issues of qualitative research. First, the course provides theoretical insights into different quantitative research methodologies and designs. Second, the course introduces PhD students to various methodologies for gathering data, observations, and evidence and for organizing them in ways that can be used for quantitative analysis. Third, the course introduces PhD students to various quantitative methodologies – from regression	ING-IND/35

			analysis to text mining –to support PhD students in the development of practical skills as well as critical thinking for interpretation purposes. As to the qualitative research, PhD students will be introduced to the basic ideas behind the qualitative research in social science. Students will learn about data collection, description, analysis and interpretation in qualitative research. Qualitative research often involves an iterative process. The course will focus on the ingredients required for this process: data collection and analysis.	
Human-based Smart Manufacturing Systems	primo anno	20	The fifth industrial revolution, known as Industry 5.0 (I5.0), encompass a vision for a human-centered, innovative, resilient, and competitive industry. I4.0 moved the focus from a traditional product-driven (mass) industrial production towards a “demand-driven” market that requires the fully integrated systems able to adapt, in real-time, the production system to the demand change. The I5.0 approach re-introduces the human-centered dimension as the key resource of a smart production systems adopting I4.0 technologies. In the transition from traditional to new production systems, two critical elements arise: the companies' "readiness degree", that is, the assessment of the potential benefits from the adoption of I4.0 technologies and the “human component”. With the adoption of new technologies, the role of human workers will gradually change, and operators will be required to perform more cognitive tasks than in the past. Their dexterity and cognitive capabilities reveal appropriate economic and reliable solutions to meet the required flexibility level. With the aim of successfully implementing ICT technologies allowing ‘thing’, ‘services’ and ‘human’ to be continuously remotely connected by i-cloud centralized systems, a reliable evaluation of both the potential increasing of the competitiveness degree and a reliable description of the behavior and of the knowledge and skills of the human component in the new work environment are required.	ING-IND/17
Technological changes and transition perspective	primo anno	20	"The technological change is continuously increasing its pace. New technologies and business models are impacting the economic and social systems in a deep and unexpected way as well as social systems are adapting and reacting to these changes. The aim of the course is firstly to adopt the epistemological point of view for the	ING-IND/35

			technological determinism to examine how technology, economy, and society interact each other when a change in technology occurs. Some cases will be presented and discussed (asbestos cement, iron, and automotive technologies). Then, the transition perspective is presented to explain how such changes can determine long-term and wide impact. The type and nature of the transition are discussed. The structural and ideological nature of a transition will be described to support a full understanding of the phenomena. Some tools to operationalize ideologies are introduced. The green and digital transition will be examined adopting this perspective. A specific analysis for the transitions towards the smart city and the new space economy will be discussed with students.	
SMART SUSTAINABLE MANUFACTURING	primo anno	20	The major issue of sustainable manufacturing activities is the management of useful information: the way we choose data to measure may strongly change the perception of its nature and influence. Thus sustainability, which is an emerging paradigm in manufacturing, is now leading most of the scientific efforts in defining the assessment of sustainability and the collection of significant measures of transition toward actions that satisfies the economic, environmental, social and technological targets. Smartness paradigm in manufacturing, on the other hand, is deeply tied to the information management and use, provided the Digital Twins as well as Cyber Physical Systems are mostly based on data get from sensing systems and on their elaboration to predict the evolution of systems simulated. The class will bring the students to understand the main driving issues in assessing and managing sustainable manufacturing in the light of a smart transition. At the same time will put major issues to come to stimulate students in their scientific career to deepen open issues still remaining on the subject from a technological perspective. Contents 1CFU. Manufacturing processes and the main factors of production: material and energy. Manufacturing and sustainability. Production systems and their sustainable management. Smart manufacturing paradigms: I4.0 and 5.0. 1CFU Criteria for modeling manufacturing processes and their critical variables.	ING-IND/16

			Cyber Physical System and Cyber Physical Social System. Measurement of the ecological footprint of a process: carbon and water footprint. Sustainability Assessment of manufacturing processes based on 1 and 2nd law of thermodynamics.	

Tabella 2.

- La SCUDO approva all'unanimità gli insegnamenti proposti in tabella 2.

La seduta si scioglie alle ore 13:00: è redatto il presente verbale, che viene letto e approvato seduta stante.

Il Direttore

Firmato digitalmente da: Luigi Alfredo Grieco
Organizzazione: POLITECNICO DI BARI/04301530723
Limitazioni d'uso: Explicit Text: I titolari fanno uso del certificato solo per le finalità di lavoro per le quali esso è rilasciato. The certificate holder must use the certificate only for the purposes for which it is issued.
Data: 10/05/2023 15:16:44

Il Segretario

Firmato digitalmente da: MARCO DONATO DE TULLIO
Politecnico di Bari
Firmato il: 10-05-2023 15:05:49
Seriale certificato: 699988
Valido dal 12-06-2020 al 12-06-2023