

Seasonal
School
2023/24





Sant'Anna

Scuola Universitaria Superiore Pisa

**Seasonal
School**

2023/24



Benvenute/i alla Scuola Superiore Sant'Anna

Sono lieta di presentarvi le “**Seasonal School**” della Scuola Superiore Sant'Anna di Pisa destinate a brillanti studentesse e studenti universitari e dottorandi italiani e stranieri.

Fin dalla sua costituzione, la Scuola si è distinta per essere una **learning community** in cui docenti, allieve e allievi interagiscono ed affrontano tematiche di ricerca di frontiera con un approccio interdisciplinare. La missione della Scuola è, infatti, quella di essere una istituzione pubblica di riferimento e di qualità, dove il talento è messo in campo per prendersi cura del mondo e per contribuire con responsabilità alla sua crescita culturale e alla sua sostenibilità, nel rispetto dei valori costituzionali.

Con questa missione, ci rivolgiamo agli studenti e studentesse universitari italiani e stranieri di alto merito desiderosi di mettere in gioco il proprio talento partecipando ad una Seasonal School: un corso intensivo, di una o due settimane, a carattere residenziale o in modalità on line, dedicato a tematiche di frontiera interdisciplinari.

Mi auguro di potervi incontrare presto per accogliervi nella nostra comunità scientifica ricca di stimoli, in cui la ricerca diventa la palestra di apprendimento per la formazione.

Sabina Nuti
Rettrice

Welcome to Sant'Anna School

I am delighted to present to you the “**Seasonal Schools**” offered by the Sant'Anna School of Advanced Studies of Pisa and designed for brilliant Italian and foreign undergraduate and graduate students.

Since its establishment, the School has distinguished as a **learning community** in which faculty and students closely interact to address frontier research topics with an interdisciplinary approach. The School's mission is indeed to be a high-quality public institution of reference, where talent is nurtured to take care of the world and to contribute with a strong sense of responsibility to its cultural growth and its sustainability, in line with our constitutional values.

With this mission in mind, we call on the gifted Italian and foreign students who are eager to bring their talent into play by participating in a Seasonal School: an intensive course, of one or two weeks, on-site or online, focused on interdisciplinary frontier research topics.

I hope I will soon have an opportunity to meet you and to welcome you into our lively scientific community, where research becomes the training ground for education.

Sabina Nuti
Rector



Rankings

Times Higher Education Young University Rankings 2022

1° posto a livello nazionale su 17 università censite

7° posto a livello europeo

14° posto a livello mondiale su 790 università censite

Times Higher Education Young University Ranking 2022

1st at the national level on a census of 17 institutions

7th at the european level

14th at the international level on a census of 790 institutions

Chi siamo

“A research university, a school of talent, for a more sustainable and inclusive world”

Questo è il motto della Scuola Superiore Sant’Anna, che si qualifica innanzitutto come una research university riconosciuta a livello internazionale per la qualità della ricerca condotta nei suoi Istituti e laboratori.

La Scuola Superiore Sant’Anna è un istituto universitario pubblico a statuto speciale, che si propone di promuovere, a livello nazionale e internazionale, lo sviluppo della cultura e della ricerca scientifica e tecnologica nell’ambito delle Scienze Economiche e Manageriali, Scienze Giuridiche, Scienze Politiche, Scienze Agrarie e Biotecnologie vegetali, Scienze Mediche e Ingegneria Industriale e dell’Informazione.

La Scuola ha, da sempre, l’obiettivo di sperimentare percorsi innovativi nella ricerca e formazione in un contesto interdisciplinare e di continuo scambio culturale e intellettuale tra docenti, allieve e allievi.

Da qui nascono idee innovative, sviluppate in collaborazione con università, enti, aziende e istituti di ricerca stranieri. Grazie al suo carattere internazionale, alla formazione di eccellenza e alla comunità scientifica, la Scuola Superiore Sant’Anna vuole essere punto di riferimento in Italia e all’estero.

About us

“A research university, a school of talent, for a more sustainable and inclusive world”

This is the motto of the Sant’Anna School of Advanced Studies, which, first and foremost, qualifies itself as a research university, internationally renowned for the quality of the research carried out in its Institutes and laboratories.

Sant’Anna School is a special-statute public university that aims to promote, on a national and international level, the development of culture and scientific and technological research in the fields of Economic and Managerial Sciences, Legal Sciences, Political Science, Agricultural sciences and Plant biotechnology, Medical Sciences and Industrial and Information Engineering. Since its foundation, Sant’Anna School has had the goal of experimenting innovative programmes in research and training activities, with an interdisciplinary approach and in a context of continuous cultural and intellectual exchange between faculty and students.

Innovative ideas are born and developed in this environment, in collaboration with foreign universities, institutions, companies and research centres. Sant’Anna School wants to grow its role as a point of reference in Italy and abroad, thanks to its international nature, its focus on excellence, and its active scientific community.



Ricerca di frontiera

Affrontare i problemi con un approccio interdisciplinare e condividere le conoscenze acquisite in ambiti diversi rappresenta la nuova sfida della ricerca.

Gli Istituti e i laboratori di ricerca della Scuola si aprono alle studentesse e agli studenti di talento per coinvolgerli nei loro progetti sulle tematiche di avanguardia per il progresso della scienza e della società.

Dove siamo

Pisa, città d'arte, di cultura e di scienza è un museo a cielo aperto famosa non solo per la bellissima Piazza dei Miracoli, patrimonio dell'UNESCO, ma anche per le sue istituzioni universitarie e di ricerca che costituiscono un centro d'eccellenza e di innovazione per la formazione e la ricerca tra i più avanzati del mondo. A Pisa hanno studiato illustri scienziati come Galileo Galilei, Enrico Fermi, Antonio Pacinotti, Carlo Rubbia e ospita tuttora talenti che danno vita ad un ambiente accademico vivace ed attivo che contribuisce ad arricchire l'esperienza universitaria delle studentesse e degli studenti che vi entrino in contatto. Strade e piazze popolate da turisti e studenti provenienti da ogni parte del mondo la rendono una città accogliente e stimolante anche per concludere una intensa giornata di studio.

Frontier Research

Addressing problems with an interdisciplinary approach and sharing the knowledge acquired in different environments represents the research challenge of the future.

The School's Institutes and laboratories now open their doors to talented students and involve them in their cutting-edge research projects for the progress of science and society.

Where we are

Pisa is a city of art, science and culture, an open-air museum that is not only famous for the beautiful "Piazza dei Miracoli", a UNESCO World Heritage Site, but also for its universities and research centres, which constitute a cluster of excellence and innovation in education and research among the most advanced in the world.

Illustrious scientists such as Galileo Galilei, Enrico Fermi, Antonio Pacinotti, Carlo Rubbia studied in Pisa, and the city continues to hosts talents that create an active and lively academic environment, contributing to a richer university experience for all students who take part in it.

Pisa's streets and squares, populated by tourists and students from all over the world, make it a welcoming and stimulating city to discover after an intense day of study!



Le Seasonal School

Cosa sono

Le **Seasonal School** sono percorsi formativi di eccellenza a carattere fortemente interdisciplinare, focalizzati sulle tematiche di ricerca di frontiera della Scuola.

Durata

Le Seasonal School hanno la durata di **una o due settimane**, si svolgono prevalentemente in **lingua inglese** e possono avere **carattere residenziale** oppure svolgersi con modalità di **didattica a distanza**. Al termine del percorso, successivamente al superamento di una prova finale, è previsto il rilascio di un attestato di partecipazione con il riconoscimento dei CFU indicati nei singoli bandi.

A chi si rivolgono

Sono destinate prioritariamente a studentesse e studenti universitari provenienti da corsi di Laurea, anche a ciclo unico, di Laurea Magistrale che abbiano le medesime caratteristiche di profitto degli studenti della Scuola. La partecipazione di studenti iscritti a corsi PhD è possibile sulla base di quanto stabilito nei singoli bandi. Le Seasonal School sono occasioni di incontro e confronto per entrare in contatto con altri studenti e studentesse di merito provenienti da tutta Italia e dall'estero, da vivere "dentro" le nostre strutture e i nostri laboratori.

Requisiti

Sono ammessi studentesse e studenti iscritti (o laureati da meno di 6 mesi al momento della domanda) ad un corso di Laurea, Laurea Magistrale o Dottorato di università italiane o straniere che siano in pari con gli esami previsti dai diversi regolamenti didattici e con una media di profitto pari almeno a 27/30 per il sistema italiano o almeno B per quello internazionale.

L'accesso alle Seasonal School prevede il possesso della conoscenza autocertificata della lingua in cui si svolgerà il corso pari o superiore al livello B2 qualora le studentesse o gli studenti non siano di madre lingua.

The Seasonal Schools

What the Seasonal Schools are

The Seasonal Schools are training programmes "of excellence", which are strongly interdisciplinary, and focused on the School's frontier research topics.

Duration

The Seasonal Schools have a duration of **one or two weeks**; they are held predominantly in **English** and may be held **on-site** or **online**. Participants will be awarded a certificate of attendance at the end of the programme after passing a final examination, with full recognition of the credits (CFU) indicated in each call.

Addressees

They are open primarily to Bachelor Degree and Masters' Degree students who have the same advancement characteristics as the School's students. The participation of students registered in PhD courses is possible according to the rules indicated in each call. The Seasonal Schools are also opportunities for meetings and exchanges with other high-performing students from all over Italy as well as from abroad, to be experienced "inside" our facilities and laboratories.

Admission requirements

Candidates eligible for admission will be: students enrolled (or who have graduated no longer than 6 months before the application's submission) in a Bachelor degree, Masters' Degree or PhD course at an Italian or foreign university, and who are on track relative to the examinations required by their educational institutions and with an average examination mark at least equal to 27/30 in the Italian system, or at least B in international system. Access to Seasonal Schools requires a self-certified knowledge of the teaching language at or above B2 level if students are not mother tongue speakers.



Come accedere alle Seasonal School

Per ogni Seasonal School viene pubblicato un bando di concorso dove si trovano tutte le informazioni sulle modalità di partecipazione e sulla documentazione necessaria per inviare la candidatura. I bandi vengono pubblicati sulla pagina: www.santannapisa.it/it/seasonal-school.

Costi

I costi e le modalità di pagamento sono indicati nei bandi delle singole Seasonal School.

La quota di iscrizione include, oltre alla partecipazione alle lezioni, anche il materiale di studio, il vitto e l'alloggio nel caso di iniziative in presenza.

Agevolazioni e premi

In base al proprio ISEE universitario sono previste riduzioni della quota di iscrizione. Gli studenti e le studentesse delle università italiane e straniere convenzionate hanno diritto alla tariffa agevolata del 10% sui costi di iscrizione. Ai partecipanti che, al termine del corso, avranno conseguito la valutazione migliore verrà erogata una borsa di studio pari a 450 euro finanziata dalla Fondazione Talento all'Opera Onlus

(<https://www.santannapisa.it/it/ateneo/fondazione-il-talento-allopera-onlus>) sulla base di quanto specificato nei bandi.

Alloggi

Le studentesse e gli studenti delle Seasonal School sono ospitati nelle strutture della Scuola, foresteria o collegi o in alberghi convenzionati, secondo disponibilità.

Le strutture sono collocate nelle immediate vicinanze della Scuola così da permettere ai partecipanti di godere appieno della città di Pisa e del suo centro storico.

How to apply to the Seasonal Schools

The Calls for Application published at www.santannapisa.it/en/seasonal-schools contain all the necessary information on how to participate and what documentation is required in order to submit the application online.

Costs

The costs and methods of payment are indicated in the Calls of the individual Seasonal Schools.

Besides attending the lessons, the enrolment fee also includes the study materials, in addition to full board and lodging in the case of on-site courses.

Preferential rates and prizes

A reduction in the enrolment fee is available based on the applicant's income.

Italian and foreign Universities with specific agreements with Sant'Anna School are entitled to a 10% reduction in the enrolment costs.

A 450 € scholarship provided by Fondazione Talento all'Opera Onlus will be assigned to the best performing participants of each course as indicated in the Calls.

(www.santannapisa.it/en/university/talento-allopera-foundation)

Accommodation

Students are accommodated in the School's facilities, guesthouse or student residences, or in affiliated hotels, subject to availability.

The facilities are located close to the School in order to allow participants to fully enjoy the city of Pisa and its historic center.

Il network del talento

Forte della sua esperienza, la Scuola Superiore Sant'Anna si propone quale soggetto facilitatore e di coordinamento per la costituzione della rete del talento attraverso la collaborazione con università italiane e straniere e altri soggetti istituzionali interessati ad offrire ai propri studenti e studentesse di merito una formazione integrativa sulle tematiche di ricerca più avanzate.

Al momento hanno aderito al progetto le seguenti università ed enti: **Università di Catania, Università della Tuscia, Università di Trento, Fondazione Onaosi, Università di Messina, Università di Macerata, Università di Camerino, Università della Calabria, Università di Palermo, Università della Valle d'Aosta, Libera Università di Bolzano, Università Politecnica delle Marche, Università di Siena, Scuola Galileiana di Studi Superiori, Università di Pisa e Università di Firenze.**

Alle università convenzionate è riservato almeno un posto per ogni corso in programma oltre alla riduzione del 10% delle spese di iscrizione a tutti gli studenti e le studentesse, fermi restando i criteri di selezione previsti dal bando di ammissione.

Per partecipanti iscritti all'Università di Pisa che non necessitano di alloggio la riduzione applicata è del 40%.

➔ **Il network delle collaborazioni è in costante evoluzione, le università interessate ad aderire al progetto possono contattarci per avere maggiori dettagli e informazioni**
seasonalschools@santannapisa.it
Tel. +39 050 883204/3275

The talent network

On the strength of its experience, the Sant'Anna School of Advanced Studies proposes itself as a facilitator and coordinator for the establishment of a talent network through collaboration with Italian and foreign universities and other institutional subjects in order to offer their students of merit an integrative training on the most advanced research topics.

At the moment, the following Universities and associations have joined the project: **University of Catania, University of Tuscia, University of Trento, Fondazione Onaosi, University of Messina, University of Macerata, University of Camerino, University of Calabria, University of Palermo, University of Aosta Valley, Free University of Bozen-Bolzano, Marche Polytechnic University, University of Siena, Galilean School of Higher Education, University of Pisa and University of Florence.**

Affiliated universities are reserved at least one place for each course included in the program as well as a 10% reduction in enrolment costs for all students, without prejudice to the selection criteria set out in the admission call. Students enrolled at the University of Pisa who do not need accommodation, are granted a reduction of 40%.

➔ **The network of collaborations is constantly evolving. Universities interested in joining the project can contact us for more details and information**
seasonalschools@santannapisa.it
Ph. +39 050 883204/3275

I collegi di merito

Il Protocollo d'intesa sottoscritto nel gennaio 2021 tra la Scuola Superiore Sant'Anna e la Conferenza dei Collegi Universitari di Merito prevede l'attivazione di una collaborazione strutturata tra le due istituzioni, aprendo la partecipazione alle Seasonal School a studentesse e a studenti dei 52 **Collegi Universitari di Merito** aderenti alla Conferenza con una tariffa agevolata del 10%. Fermi restando i criteri di selezione previsti dal bando di ammissione, la Scuola riserva almeno un posto per ogni corso ad una studentessa o studente dei Collegi Universitari di Merito segnalato dalla Conferenza.

Italian university colleges of merit

As provided in the Memorandum of Understanding finalized by Sant'Anna School and the Conferenza dei Collegi Universitari di Merito (CCUM) in January 2021, students of the 52 **Italian University Colleges of Merit** joining the association, can participate to Seasonal School with a 10% reduction in enrolment costs.

Moreover, for every course, Sant'Anna reserves at least 1 position for a student coming from a University College of Merit, upon appointment of CCUM and the fulfilment of the selection criteria provided by the call for admission of every course.

EELISA

European University

Il progetto EELISA

EELISA, European Engineering Learning Innovation and Science Alliance, è un network del programma European Universities a cui partecipa la Scuola Superiore Sant'Anna, che riunisce dieci istituzioni universitarie europee con l'obiettivo di definire e implementare un modello condiviso di ingegnere europeo radicato nella società contemporanea. Per gli studenti e le studentesse delle università partner (**Universidad Politécnica de Madrid, Budapesti Műszaki és Gazdaságtudományi Egyetem, École Nationale des Ponts et Chaussées, Friedrich-Alexander-Universität Erlangen-Nürnberg, İstanbul Teknik Üniversitesi, Scuola Normale Superiore, Universitatea Politehnica din București, Université Paris Sciences et Lettres, Zürcher Hochschule für Angewandte Wissenschaften**) sono previste agevolazioni rispetto al pagamento della quota d'iscrizione.

EELISA – European Universities

EELISA, European Engineering Learning

Innovation and Science Alliance, is a project developed within the framework of the European Universities program which brings together ten Higher Education Institutions from different countries in Europe with the aim of defining and implementing a shared model of European engineer rooted in society.

Students enrolled in the following Universities, partner of the network: **Universidad Politécnica de Madrid, Budapesti Műszaki és Gazdaságtudományi Egyetem, École Nationale des Ponts et Chaussées, Friedrich-Alexander-Universität Erlangen-Nürnberg, İstanbul Teknik Üniversitesi, Scuola Normale Superiore, Universitatea Politehnica din București, Université Paris Sciences et Lettres, Zürcher Hochschule für Angewandte Wissenschaften** can be waived from the payment of the enrollment fee under certain circumstances.

Seasonal
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Program
2023/24



COMINCIO

Come comunicare scienza e tecnologia



Period

September 4th-8th, 2023

Deadline for Registration

August 20th, 2023

Learning objectives

COMINCIO aims to provide tools for effective communication within the Third Mission of University, a recent matter of institutional evaluation. It is a very topical and unique proposal for learning in a compact and structured way how to narrate your work and values to society in various settings, including job placement.

At the end of the course, students will have learned the central themes of communication and will be trained operationally to communicate appropriately and effectively in the scientific and technological fields.

Teaching methodologies

Through multidisciplinary lectures and exercises, the course will offer a general introduction to fundamental issues in communication in general and in communicating science and technology in particular, providing practical insights and basic skills.

We will first proceed to build a conceptual toolbox, through an introduction to the Ethics and Deontology of the communicator; Semiotics; fundamental concepts on verbal, non-verbal and para-verbal communication. Then, practical exercises will guide students to identify concepts for incisive presentations, both in writing and with graphics and video

shooting, taking into account the context, the general public as well as professionals' publics, the media available today, with their diversity and differences of approach. Further subjects will include public speaking and interviews for television, pitch talks and press releases for interaction with the media and companies; online blogs; press conferences; effective and responsible use of social media; communication for the company and in the context of European projects. Professors of Sant'Anna will be supported by experts in specific sectors, in an interactive and multidisciplinary environment.

Who should attend this Seasonal School

The course is mainly aimed at undergraduate and graduate students, but also young researchers, of scientific disciplines. However, students and young researchers from social sciences, communication departments and schools of journalism are also invited, according to personal interest and motivation.

Coordinator and key teaching staff

Coordinator: Debora Angeloni

Key teaching staff: Debora Angeloni, Francesco Ceccarelli, Alberto Di Minin, Marco Frey, Manuela Furlan, Marco Martinelli, Alberto Pirni, Mattia Rossetti.

Exploring sea and space: technologies, opportunities and challenges



Period

September 18th-22nd, 2023

Deadline for Registration

July 31st, 2023

Learning objectives

In the last centuries, humanity has fully explored and mapped the emerged fraction of Earth surface; today it has growing interest in exploring and exploiting the submerged fraction of the Earth as well as the nearby space regions, intensively. To this aim, engineers provide new powerful means (robots, underwater and space communication systems, new nano-satellite solutions); the exploration and exploitation of resources also pose problems relating to the biology of living beings. Moreover a wide range of new issues arise, about the economic implications and legal implications. The School aims to provide a concise overview of the relevant scientific challenges and development prospects in a unitary framework where issues of economic and environmental impact, potential conflicts and regulatory assessments are also addressed. The Seasonal School will take an holistic approach and will introduce participants to the key technologies in a unitary framework, where the engineering role is viewed together with biological and medical issues, economic aspects and legal problems. At the end of the Seasonal School, the participants will have a comprehensive overview of the future trends in the challenging topics of space and sea exploration.

Teaching methodologies

Students will find a cross-disciplinary learning environment, interacting with professors and industrial managers that are leaders in their research areas. They will also be given the opportunity to visit the labs of Scuola Superiore Sant'Anna and experience latest research approaches.

Who should attend this Seasonal School

Advanced Undergraduate, postgraduate and PhD students from engineering or physics.

Coordinator and key teaching staff

Professor Ernesto Ciaramella

Prof. Cecilia Laschi (tbc)

Prof. Debora Angeloni

Prof. Emanuele Sommario

Dr Giulio Cossu

Prof. Giuseppe Turchetti

Prof. Vincenzo Lionetti

PLANETHEALTH

A multidisciplinary approach to preventing and treating the effects of planetary health disruption on human health



Period

September 25th-29th, 2023

Deadline for Registration

August 22nd, 2023

Learning objectives

The new goal for worldwide Good Health promotes healthy lifestyles, preventive measures and modern, efficient healthcare for everyone. The Seasonal School will introduce participants to the urgent topic of planetary health, exploring the causal relationship between planet health and human health through a multidisciplinary dialogue between medicine, experimental and social sciences. Climate and environmental determinants of human health and sustainable practices to manage them will be explored. Participants will learn how the management of geographic dimension, time scale, socio-cultural and economic context are tools for improving human healthcare in the context of planetary health. The Seasonal School, moreover, will look at how law, inter-legality, and population monitoring of illness events might help physicians predict health implications. The new technologies in preventing and treating the effects of planetary health disruption on human health will be thoroughly analysed during the Seasonal School.

At the end of the Seasonal School, students will develop a comprehensive view of the planetary health to adopt new sustainable medical practices and to support global management of patients generated by

the planetary climate and environmental emergency.

Teaching methodologies

Students will find an interactive and cross-disciplinary learning environment that facilitate problem solving as well as strong decision-making, strategic communication, and leadership. Several experts will participate to the program presenting their experience.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds (e.g. medicine, biomedical sciences and nursing science) who are interested in understanding how to prevent and treat the effects of planetary health disruption on human health.

Coordinator and key teaching staff

Coordinator: Marco Frey, Vincenzo Lionetti
Key teaching staff: Mariagrazia Alabrese, Valentina Casieri, Paola De Nuntiis, Laura Ercoli, Alberto Giannoni, Fabio Iraldo, Danilo Menicucci, Sara Moraca, Gianluigi Palombella, Rudy Rossetto, Cesare Stefanini, Pietro Tonutti, Milena Vainieri, Luca Valcarenghi

MEDSKILL

Development of MEDical SKILLS by Simulation



Period

October 9th-13th, 2023

Deadline for Registration

August 28th, 2023

Learning objectives

As of today, the need for practical skills and problem-solving capabilities remains largely unmet in many medical school curricula across Europe. Medical school education, in fact, remains largely anchored to a traditional paradigm of learning a discrete amount of information about pathophysiology principles and illnesses' descriptions, without worrying about developing the skills necessary to work confidently "on the patient". Digital tools based on macro-and microsimulation, thanks to their flexibility, effectiveness, accuracy and accessibility may give a fundamental contribution in solving this issue, and we want to apply their potential in undergraduate medical students' education. The **MEDSKILL school** will allow students to: 1) get in touch with digital tools that facilitate the study of anatomy, physiology, pathophysiology and clinical reasoning; 2) confront virtual patients/mannequins, interpret their artificial symptoms/signs and make decisions, taking into account the appropriateness of the choice, as well as ethical correlates and sustainability; 3) mimic clinical situations to test patient communication skills, simulate the use of diagnostic equipment, team leaders and interventional therapies.

Teaching methodologies

The MEDSKILLS initiative will deliver both lectures and hands-on lab sessions. Each practical session is preceded by an introductory lesson on the theoretical aspects of the maneuvers that will be carried out and followed by a debriefing session. The course aims to provide preparation on transthoracic and abdominal ultrasound methods and the main cardiovascular and abdominal diseases. The course is divided into formal theoretical lessons and practical internships in the Simulabo classroom with the use of the Vimedix ultrasound and advanced echocardiography simulator.

Who should attend this Seasonal School

Undergraduate medical students (V-VII academic year), postgraduate M.D.s candidacies can be evaluated.

Coordinator and key teaching staff

Coordinator: Prof. Michele Emdin, Prof. Claudio Passino

Key teaching staff: Prof. Nicola Bellè, Dr. Alberto Giannoni, Dr. Emilio Pasanisi, Dr. Francesco Sbrana, Dr. Marco Ciardetti, Dr. Giuseppe Vergaro, Dr. Angelo Monteleone, Dr. Vladyslav Chubuchnyi, Claudia Taddei, Elisa Poggianti

WAT-CHANGE

Water-related ecosystem services for adapting societies to climate change



Period

October 16th-20th, 2023

Deadline for Registration

September 4th, 2023

Learning objectives

While climate change is posing at risk traditional water resources management, there is the urgent need to devise low-energy and low-impact solutions to adapt the environment, societies and economies to this threat.

The WAT-CHANGE Seasonal School aims at introducing the participants to the new growing area of solutions provided by water-related ecosystem services.

In particular, we will deal with nature-based solutions for water supply, treatment of polluted water, and flood risk mitigation such as managed aquifer recharge, river restoration, constructed wetlands, sustainable drainage systems, and remediation of contaminated sites using phytoremediation techniques.

At the end of the course the students will have acquired the knowledge and skills that will allow them to understand impact and functions of the main nature-based solutions for solving the most common water resources management problems and start their design.

Teaching methodologies

The course is based on 20 hours of interactive and cross-disciplinary learning from academia and professional world along

with 8 hours of laboratory exercises or with the aid of PCs and free and open source software. A field trip will take place to visit the ecohydrological infrastructures of the Val di Cornia area. This area has recently been recognized by UNESCO's International Hydrology Program as a site of global importance for ecohydrology.

A final 4-hour workshop will bring participants in contact with Italian companies involved in the design and management of nature-based solutions and with regulatory bodies, in order to deepen the knowledge of the regulatory framework.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students with scientific and engineering backgrounds (e.g. earth and environmental sciences and engineering, civil engineering, natural sciences, agricultural engineering, biological sciences) interested in understanding the agri-food systems governance. Participation of students from social or economics background is also welcome.

Coordinator and key teaching staff

Dr. Rudy Rossetto

Laura Ercoli

Alessandra Francini

Luca Sebastiani

CESM

Circular Economy and Sustainability Management



Period

October 23rd-27th, 2023

Deadline for Registration

September 11th, 2023

Learning objectives

The main target of the of the Circular Economy and Sustainability Management (CESM) seasonal school is represented by students from different backgrounds interested in the field of efficient resource management and circular economy. The CESM course explores organizational aspects and innovation facets related to all phases of the product life cycle; moreover, it provides practical overview of how processes, decisions and business models should change in light of the new circular economy paradigm. In more detail, the CESM seasonal school consists of 9 training modules lasting half day each on issues such as: circular economy assessment, circular design, strategy development & business models, communication. Finally, a half-day laboratory is scheduled to apply what students have learned in all previous lessons. Therefore, the learning objectives of CESM encompass: helping participants to acquire a framework of useful skills to seize the opportunities in the economic shift; managing the challenges and transformation processes in a circular logic in order to encourage the practical application of the knowledge gained.

Teaching methodologies

Students will be interactively and proactively engaged in the training process thanks to the integration of the theoretical concepts with the practical experience under the guidance of the trainers, encompassing both academics and practitioners. The use of experiential techniques and the articulation of training and laboratories will allow the participants to consolidate existing skills and increase self-awareness. The innovative teaching methods will also rely extensively on companies' experiences in order to provide real world examples and lessons learnt. Case studies will also be included amongst the teaching tools on the purpose of encouraging the practical application of theoretical concepts, thus bridging the gap between theory and practice.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds (e.g. management, economics, law, political science, engineering, life sciences) who are interested in understanding how to manage the transition process towards the circular economy paradigm.

Coordinator and key teaching staff

Coordinator: Prof. Marco Frey

Key teaching staff: prof. Fabio Iraldo, Prof.

Francesco Testa, Prof. Francesco Rizzi, Dr

Massimo Battaglia, Dr Tiberio Daddi, Dr

Natalia Gusmerotti, Dr Eleonora Annunziata,

Dr Filippo Corsini



Issues on China

Innovation, Society and Culture

Period

November 20th-24th, 2023

Deadline for Registration

October 9th, 2023

Learning objectives

The Seasonal School is an intensive programme that introduces modern China's economic, social, political, and legal issues through the lens of leading research activities promoted by Sant'Anna Institutes.

Participants will have the opportunity to develop the necessary background to comprehend China's history and current challenges. More specifically, the School will be characterized by a strong multidisciplinary approach and will be focused on the encounter with people, countries, way of thinking and systems connected with China. The School will explore Chinese innovation ecosystem, geopolitical and international relations, and legal systems to ensure disciplinary and intellectual diversity, in order to guarantee the pluralism of disciplinary and intellectual perspectives.

Since China has become a more assertive actor in the international order, shaping its own system of alliances and building new regional and commercial architecture, the Seasonal School will allow European and Italian scholars "outside China" to examine the evolution, prospects, and challenges of this change.

The course also offers a wide range of cultural, social, and networking events in Pisa in collaboration with some of the

city's cultural realities: book presentations, successful Sino Italian company case studies, stories of scholars, academics, and passionate people.

The course honours Filippo Nicosia, former Italian Consul General in Chongqing.

Teaching methodologies

Lectures, led by experts from Sant'Anna faculty and distinguished specialists from the academic and business environment tied to China, will be complemented by an introductory course of basic Chinese language and culture offered by professional native-speaking instructors.

Students can attend lectures, Q&A sessions, and workshops in this interactive, cross-disciplinary learning environment.

Who should attend this Seasonal School

The Seasonal School welcomes motivated undergraduate and postgraduate students from any university and degree programme.

Coordinator and key teaching staff

Coordinator: Prof. Alberto Di Minin – Prof Nicola Bellini

Key teaching staff: Giuseppe Martinico, Andrea De Guttry, Emanuele Sommario, Francesca Capone, Antonio Frisoli, Nicola Vitiello, Francesco Strazzari

Pisa Confucius Institute Teachers – in collaboration with Galileo Galilei Italian Institute, Chongqing

BRI

Biodiversity and Business: from Research to Impact



Period

January 22nd-26th, 2024

Deadline for Registration

December 11th, 2023

Learning objectives

The protection of biodiversity is a global challenge, and the EU aims to lead the way in reversing its loss through its 2030 Biodiversity Strategy. Businesses play a crucial role in developing a model that safeguards and regenerates biodiversity and the ecosystem services they provide. The Seasonal School “Biodiversity and Business: from Research to Impact” is dedicated to tackling the global challenge of biodiversity protection and promoting a regenerative economic development model. The objectives of the Seasonal School are as follows: (1) examine and promote a development model capable of protecting and regenerating biodiversity and the services that ecosystems provide, from a perspective of regenerative economic development; (2) provide participants with stimuli and tools to understand and measure the impact of business on biodiversity, evaluate risks and opportunities; and (3) foster technological and organizational innovation, encouraging the development of new technological and organizational solutions that foster a regenerative economy that protects natural capital.

The Seasonal School is affiliated with the National Biodiversity Future Center (NBFC), an Italian project funded by the European Union’s NextGenerationEU initiative. The NBFC,

approved by the Italian Ministry of University and Research, involves 48 partners and over 1,300 researchers focused on biodiversity.

Teaching methodologies

The Seasonal School includes frontal lessons with active participation from students, case studies discussion, in-person and virtual testimonies from entrepreneurs, managers and experts in the field of biodiversity, company visits to parks/organizations that contribute to biodiversity protection, and guided group work aimed at promoting discussion among students from different disciplines on the contents learned during the Seasonal School.

Who should attend this Seasonal School

Undergraduate, postgraduate, and PhD students from different backgrounds who are interested in acquiring knowledge, skills, and experiences in the broad field of biodiversity and business. The Seasonal School may also include employees from private organizations, public servants, policy makers, etc. among the participants.

Coordinator and key teaching staff

Coordinator: Valentina Cucino

Key teaching staff: Andrea Piccaluga, Lino Cinquini, Alberto Di Minin, Francesco Testa, Andrea Tenucci, Giuseppe Turchetti, Giacomo Pigatto, Sara Tessitore, Cesare Stefanini, Donato Romano, Pietro Tonutti, Paolo Barberi, Laura Ercoli, Anna Camilla Moonen, Valentina D’Amico

Cibo, Sostenibilità e Diritti



📅 Period

January 29th-February 2nd, 2024

✍️ Deadline for Registration

December 12th, 2023

Learning objectives

The Seasonal School will introduce participants to the urgent topic of food sustainability, exploring how to build sustainable and climate-resilient agri-food systems through a dialogue between social and life sciences. Regulatory and non-regulatory measures for socially inclusive and environmentally more efficient food systems will be addressed. The policy and legal implications of the transformative approach recently taken by the EU with the European Green Deal and the shift towards more sustainable solutions in a Farm to Fork perspective will be thoroughly analysed during the Seasonal School. Topics such as food security and the right to food, food safety, international trade, digital innovation and blockchain will be at a centre stage. Moreover, issues linked to farming and consumption models will be taken into consideration through seminars given by scholars from the life science Institute.

Teaching methodologies

Students will find an interactive and cross-disciplinary learning environment that facilitate problem solving as well as strong decision-making, strategic communication, and leadership. Interdisciplinary will characterize both the teaching staff (including

professors of law, economics, management, agronomy, medicine) and the participants. Cross-fertilization among disciplines is in fact the most effective way for designing more sustainable food systems.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds (e.g. law, political science, life sciences and engineering) who are interested in understanding the agri-food systems governance.

Coordinator and key teaching staff

Eloisa Cristiani - Mariagrazia Alabrese (coordinatoors)

Francesca Capone, Natalia Gusmerotti, Laura Ercoli, Vincenzo Lionetti, Camilla Moonen, Andrea Saba

Management of Innovation and Common Good



Period

February 5th-9th, 2024

Deadline for Registration

December 13th, 2023

Learning objectives

This Seasonal School on “Management of Innovation and Common Good” – whose 2024 edition will be the third one – addresses a very important topic with a strong interdisciplinary approach, involving especially innovation management, but also sustainability and health management. The specific approach of this Seasonal School (1) aims at arousing the interest of participants from different scientific disciplines and with different professional objectives and (2) focuses on the goal of contributing to the common good (at the level of universities, companies, institutions and territories). The theories and tools for managing innovation will be presented and discussed not so much with the objective of creating competitive advantage, but as a support to the ability to launch new initiatives of various kinds aimed at creating value for the society as a whole, especially in coherence with the need to rethink the current capitalist system. Emphasis will be given to the role of purpose-driven organizations, their capacity to trigger innovation solutions that address societal problems, as well as on the emergence of new ways of interacting with social, environmental and cultural contexts. In this regard, some paradigms that are today at the center of the debate on the transformation

of the economy which is urgently needed will be presented, such as those of the creation of shared value, open innovation and civil economy. The role of the United Nations Sustainable Development Goals will also be addressed.

Teaching methodologies

The Seasonal School will include lectures by professors, company visits, as well as presentations by people active in different types of profit and non-profit initiatives aimed at contributing to the common good. Students will be also asked to contribute not only with questions but also with short presentations about specific issues as well as their personal experiences. The School will also be characterized by intense “out of the classroom” activities, during which participants and professors will have the opportunity to better know each other.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds interested in acquiring knowledge, competences and experiences in the broad field of innovation and common good.

Key teaching staff

Coordinator: Andrea Piccaluga

Key teaching staff: Francesco Testa, Natalia Gusmerotti, Valentina Cucino, Gianluca Gionfriddo, Sara Barsanti, Nicola Bellini

AGRIDEV

Climate resilient, biodiversity-based agriculture for sustainable development



Period

February 12th-16th, 2024

Deadline for Registration

January 10th, 2024

Learning objectives

Cropping systems in the XXI Century face complex challenges that cannot be addressed with unidimensional solutions. AgriDev program spans through climate science, agrobiodiversity, and agricultural economics, with a focus on participatory approaches, with the aim of developing new angles to engage momentous challenges in food security, sustainability, and climate change adaptation. Students will develop a portfolio of knowledge at the base of cutting edge scientific approaches in research for sustainable development, with a focus on smallholder agriculture. The seasonal school is structured in interconnected modules. The first module will explore climate science, discussing key concepts in climate change, and climate-agriculture nexus. The second module will deal with agrobiodiversity, its relevance for sustainability and provision of ecosystem services. The third module will discuss breeding approaches and means to enhance varietal development and recommendation. The fourth module will discuss themes of economic development and agriculture and explore the nexus between climate change and inequality. Finally, the students will be engaged in a role game in which they will be tasked to design a project proposal to be submitted to a European Union

financing scheme. Eventually, AgriDev will build a holistic interpretation of sustainable intensification of farming systems combining climate, agronomy, and economics to increase the impact of agricultural research for development.

Teaching methodologies

The seasonal school is structured in a blended training modality joining lecture and panel discussions over five days in Pisa, combining daily sessions with evening gatherings. Trainees will be involved in roundtable discussions and will be given opportunities to present themselves, their background, and their research ambitions. We aim to maximize interaction with training staff to foster discussion outside the classroom, through city tours and aperitivi (a staple of Italian lifestyle).

Who should attend this Seasonal School

The seasonal school is designed for undergraduate students, but graduate students may also apply. We expect a minimal background in life sciences, but we welcome any student with a strong interest in modern agronomic approaches aimed at sustainability.

Coordinator and key teaching staff

Coordinator: Prof. Matteo Dell'Acqua
Key teaching staff: Prof. Mario Enrico Pè, Mercy Macharia Wairimu, Prof. Roberto Buizza, Prof. Paolo Bàrberi, Anna-Camilla Moonen, Prof. Alessandro Nuvolari, Dr. Elisa Palagi

ECLIRE

The Ethics of Climate Change: Reshaping Responsibilities for Present and Future Generations



Period

February 19th-23rd, 2024

Deadline for Registration

January 11th, 2024

Learning objectives

The seasonal school aims to train participants on the ethics of climate change through a triple perspective: individual, global and intergenerational. It will also do so by opening up to disciplines beyond political and moral philosophy, such as political science, metaphysics, sociology and economics. The overall objective is to provide participants with the normative keys to analyse climate mitigation policies in the light of criteria such as historical responsibility, global asymmetries of economic power and adaptive capacity, and duties of justice towards future generations. The issue of social acceptability and socio-economic consequences will also be taken into account through the contribution of sociologists and social scientists. This will be preceded by an opening day with hard scientists dedicated to the introduction to climate change and the discussion of possible future risk scenarios.

Teaching methodologies

The seasonal school includes interactive face-to-face lectures led by pairs of lecturers, climate policy-making simulations and interdisciplinary workshops (also open to personalities from the world of communication, business and European institutions).

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds (e.g. philosophy, law, political science, life sciences, engineering, economics, management, communication, development studies) who are interested in understanding risks, solutions and opportunities of climate change mitigation.

Key teaching staff

Coordinator: Alberto Pirni

Key teaching staff: Roberto Buizza, Francesca Capone, Franco Flandoli, Barbara Henry, David Natali

IACH

InnovAction in Health care: strategy, performance and data management



Period

February 26th - March 1st, 2024

Deadline for Registration

January 15th, 2024

Learning objectives

The IACH School will cover specific research topics underpinning public health care system, with an emphasis on the analysis of real word evidence and data for a better use of assets and resources to achieve better outcomes and improved efficiency of care. The course will address the managerial implications of the recent pandemic of coronavirus disease 2019 (COVID-19), in terms of resilience and innovation. Students will explore, with both a theoretical and empirical approach, tools and frameworks related to data management, business and process reengineering, innovation strategies, decision-making processes, and performance assessment in the field of health care services. Innovation will be a key topic, meant as organizational, behavioral, and technological innovation. Innovative solution to boost patients and community participation, engagement and co-production in the care process will be discussed and analyzed in different setting of care. Students will be able to discuss challenging research issues, such as: how to measure and assess multi-stakeholder and multi-dimensional performance in health care; what are possible data driven solutions to cope with variation; how to develop innovative patient-driven interventions; what are the main levers to

improve quality and appropriateness of care and how to address challenges facing the crisis, such as the pandemic, from the organizational perspective. Finally, different research methodological approach will be discussed.

Teaching methodologies

Participants to the IACH School will be asked to join classes in a participative way. A mix of lecture-based and laboratory classes will be developed by professors and researchers. Participants will be actively engaged through a balanced mix of interactive theoretical lectures and simulations, debates, and real case studies discussions. Several business games and exercises, using real-world data, will be organized to help participants crystalize knowledge. Moreover, facilitators will be involved to facilitate interactions and improve the discussion during the lab classes.

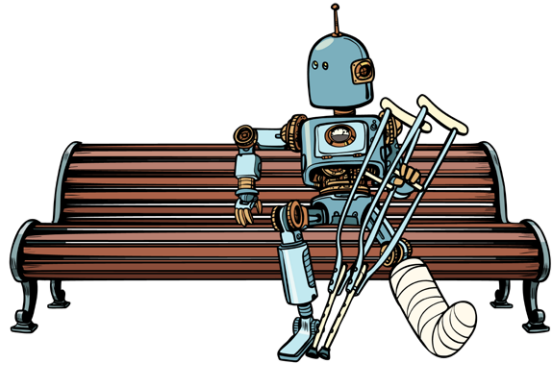
Who should attend this Seasonal School

The seasonal school is open to undergraduate and postgraduate students from various backgrounds who are interested in the field of health care management.

Coordinator and key teaching staff

Coordinator: Sabina De Rosis

Key teaching staff: Sabina Nuti, Milena Vainieri, Claudio Passino, Chiara Seghieri, Giuseppe Vergaro, Nicola Bellè, Paola Cantarelli, Francesca Ferrè, Anna Maria Murante, Francesca Pennucci, Ilaria Corazza.



DALIDA

Data, Liability, and Damages

Period

March 4th-8th, 2024

Deadline for Registration

January 22nd, 2024

Learning objectives

DALIDA Seasonal School aims to develop skills and competence to deal with tort and contractual liabilities and damages compensation, considering the current challenges arising from the application of data science methodologies to case-law analysis and bioengineering solutions to improve the quality of life for injured persons. Participants could familiarize with the EU data strategy initiatives and their consequences on fundamental rights protection in a comparative perspective, focusing on:

- i) the role of digitalisation and predictive tools to assess pecuniary and non-pecuniary losses;
- ii) new risk management strategies for digital scenarios;
- iii) AI-based and robotics applications to restore functionalities and reduce the impairments of personal injuries;
- iv) systematic effects on tort and contractual liability.

The acquired methodologies will complete existing traditional learning approaches to the investigated issues, contributing to develop the next generation of smart professionals (e.g. lawyers, judges, legal and insurance advisors, clinicians, forensic experts, data scientists and software developers, engineers, policy makers, etc).

Teaching methodologies

DALIDA participants will find an interactive,

interdisciplinary, and international learning Data, Liabilities, and Damages are analysed in a comparative perspective, focusing on the evolution that the big data analysis and the technological innovation challenges are providing for the relevant stakeholders (legal professions, clinical ones, SMEs developing relevant services and products, policy makers etc). In addition, the combination of theoretical classes with case-studies and simulations discussed together with cross-disciplinary experts will provide unique lenses to interpret the interplay between data regulations, liabilities paradigms, and damages compensation.

Who should attend this Seasonal School

Undergraduate, postgraduate, and PhD students from different backgrounds (e.g. law, political science, economics, management, forensic medicine, life sciences, computer science and engineering) who are interested in interpreting the interplay between the EU data strategy, tort and contractual liabilities, and damages compensation in real scenarios, where the big data analysis and the technological innovation are daily contributing to shape new services and products.

Coordinator and key teaching staff

Dr. Denise Amram, Coordinator

Professors Giovanni Comandé, Caterina Sganga, Maria Gagliardi, and Dr. Antonio Davola: Law;

Dr. Benedetta Guidi: Forensic Science;

Dr. Simona Crea, Dr. Marco Controzzi, Dr.

Lorenzo Vannozzi Bioengineering



PROREMOTE

PROximity care

in REMOTE areas



Period

March 11th-15th, 2024

Deadline for Registration

February 5th, 2024

Learning objectives

Recently, the importance of promoting local health and ensure proximity of care for patients emerged as evident from different perspectives. Covid-19 pandemic was an exceptional period that brought awareness to politicians, professionals, and people about the necessity of renewing lives in terms of sustainability, digital access to services, and social connectedness. How is it possible to pursue these objectives also in inner areas, mountain areas or small islands? How is it possible to guarantee equity of treatment and excellence of care when citizens live far from large welfare centres? PROREMOTE is designed to present evidence and applied cases to answering these questions.

The Seasonal School will introduce participants specifically to the urgent topic of proximity-care according to the social, psychological, experimental and engineer sciences. Students will be involved on the issues inherent to the enhancement of data, organizational models, and technological solutions for local areas. Implications for decision making and service management will be provided, with a focus on the support to innovation of services and on the strengthening social protection networks of the analysed contexts.

Teaching methodologies

Students will find an interactive and interdisciplinary learning environment that facilitates problems understanding, setting, and solving, as well as the development of a decision-making process that considers and values all the actors of the analysed contexts. Several experts from different disciplines will participate in the program presenting their competence and experience.

Who should attend this Seasonal School

PROREMOTE is mainly aimed at students of master's degree courses in Economics, Management, Political Science, Management Engineering, Organizational Sciences and Sociology, as well as students of the last two years of Medicine and Health Professions (and equivalent). Any other applications may be considered.

Coordinator and key teaching staff

Coordinator: Dr. Francesca Pennucci

Key teaching staff: Prof. Piero Castoldi, Gastone Ciuti, Alberto Giannoni, Luca Gori, Sabina Nuti, Claudio Passino, Milena Vainieri, Luca Valcarenghi

With the support of

Fondazione Cassa di Risparmio di Lucca

INSIDER

Innovazioni nel Sistema della Rappresentanza

Period

March 18th-22nd, 2024

Deadline for Registration

February 12th, 2024

Learning objectives

The seasonal school offers a selective study program open to motivated undergraduate and PhD students, giving them the opportunity to obtain a specific training on the main current issues concerning political representation, electoral and parliamentary law in a comparative and interdisciplinary perspective that includes law, political science, political philosophy, economy as well as the contribution of other fields (e.g., ICTs).

It is a kind of training that no ordinary university course is able to provide, in particular due to the presence of speakers with different background and expertise. The students will therefore acquire skills that will allow them to critically consider from different points of view the various paradigm changes in political representation.

Teaching methodologies

The course will be conducted by lecturers of different backgrounds, thus enabling participants to look at the subject matter from an interdisciplinary perspective. The course will be articulated in lectures, working groups, case studies as well as meetings with experts. Unless otherwise indicated, the lessons will be held in Italian. An advanced knowledge of the Italian language is therefore required



Who should attend this Seasonal School?

Undergraduate, postgraduate and PhD students from different backgrounds who are interested in the course topics (e.g., law, political science, social sciences, sociology, philosophy, etc.).

Coordinator and key teaching staff

Coordinators: Emanuele Rossi, Valerio Di Porto, Fabio Pacini

Key teaching staff: Francesca Biondi, Luca Gori, Elena Vivaldi

ARTIST

Pervasive ARTificial Intelligence for Next-G Softwarized neTworks



Period

June 3rd-7th, 2024

Deadline for Registration

April 22nd, 2024

Learning objectives

Future mobile network technologies (B5G, 6G, i.e. next-G) will allow the creation of new applications that will transform the way people live, work and interact with the environment. The educational objectives of the proposed seasonal school are to understand and to learn:

- the architectures of future cellular systems with regard to the radio interface, the wired segment and the software components such as virtualized entities, edge computing and AI-aided resource allocation;
- the main features of data traffic transport and routing technologies in 5G/6G networks, telemetry techniques and advanced traffic conditioning techniques; the role of AI in Next-G Softwarized neTworks, including how it can be used to automate network operations, optimize resource allocation, and enhance the overall user experience.
- the emerging services (VR, telemedicine, metaverse) that may be delivered by next-G networks and how they are able to meet the stringent requirements that such services require;
- the impact of the aforementioned services on the sustainability of the planet and the global challenges of the 21st century.

The Seasonal School ARTIST has been designed to critically evaluate and elaborate on these new technologies and the opportunities that are offered by next-G network architectures.

Teaching methodologies

ARTIST is entirely delivered in English and will include a mix of front teaching and hands-on sessions. The in-class teaching consists of focus sessions on key topics, industrial talks, brainstorming and break-out sessions. The hands-on part will take place through laboratory sessions organized over 4 afternoons. The final exam presentation of a brief project will take place on-line one week after the end of the School.

Who should attend this Seasonal School

Main candidate for attendance are Master of Science (Laurea Magistrale) students in the area of Computer Science, Telecommunication Engineering, Electronic Engineering, Aerospace Engineering, Biomedical Engineering, Automation Engineering. Postgraduate students and PhD students in the aforementioned disciplines interested in the Seasonal School topics are also welcome.

Coordinator and key teaching staff

Coordinators: Piero Castoldi, Luca Valcarenghi.

Key teaching staff: Andrea Sgambelluri, Nicola Sambo, Giulio Cossu, Francesco Paolucci, Filippo Cugini, Alessandro Pacini, Emilio Paolini

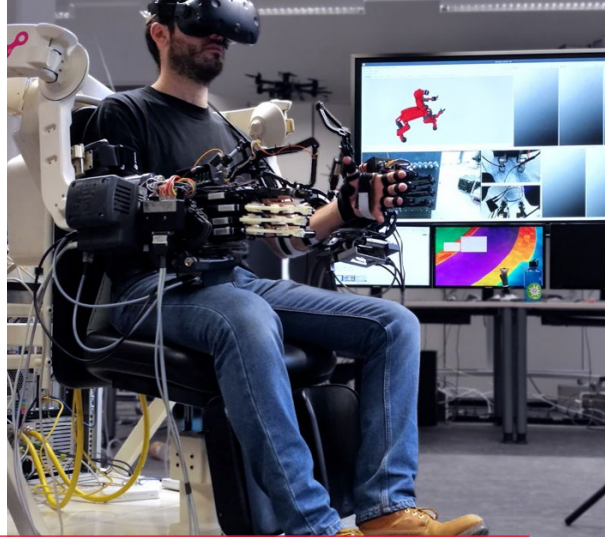
With the support of

BRAINE



AIRONE

Artificial Intelligence and RObotics in exteNded rEality



Period

June 10th-14th, 2024

Deadline for Registration

April 29th, 2024

Learning objectives

In the forthcoming decade, technologies of eXtended Reality (XR), i.e., Virtual, Augmented and Mixed Reality, and collaborative robots will become ubiquitous. Then, the XR combination with robots and human-centric Artificial Intelligence will enable distributed environments where humans, robots and virtual entities coexist and may become the sentient embodiment of remote human operators. The AIRONE School will cover specific research topics underpinning this paradigm shift affecting technology, perception and interaction ways.

At the end of the AIRONE School, participants will learn the main aspects of eXtended Reality, the basics for the design and control of collaborative and wearable robots for immersive telepresence, and the fundamentals of Machine Learning and AI applied to Robotics and artificial vision systems.

Teaching methodologies

The AIRONE initiative will deliver both lectures and hands-on lab sessions. Primary teachers active in the international research community will offer AIRONE participants a live experience of research at the intersection of Robotics, Artificial Intelligence and XR.

Who should attend this Seasonal School?

Undergraduate, postgraduate and PhD students in engineering and related disciplines who are interested in research and technology and in exploring the potential of combining eXtended Reality, Robotics, and Artificial Intelligence.

Coordinator and key teaching staff

Coordinator: Prof. Massimo Bergamasco

Key teaching staff: Prof. Antonio Frisoli, Prof. Carlo Alberto Avizzano, Prof. Massimiliano Solazzi, Prof. Marco Fontana, Dr. Marcello Carrozzino, Dr. Franco Tecchia and other teachers still to be confirmed.

AfriCon

Africonnections: Transdisciplinary approaches to Development, Security and Innovation



Period

June 24th-28th, 2024

Deadline for Registration

May 4th, 2024

Learning objectives

Africa has a central role to play in developing solutions to the global challenges of the next decades. While the African continent has experienced considerable economic and demographic growth, urbanization and development of digital technologies, on the other hand, challenges have emerged such as climate change, food insecurity, migration, disputed governance of resources, violent extremism, political instability and inequality. The Seasonal School will introduce participants to a transdisciplinary approach, drawn from the fields of political science, international law, agriculture, political economy, management and health, that will provide integrated knowledge, methodologies and tools to answer the questions that will increasingly guide international research and practice on sustainable development issues in Africa.

Teaching methodologies

Students will be exposed to an interactive learning environment: lectures, round tables and simulations will be used to promote the development of decision-making, communication, and leadership skills. Several International experts will participate, bringing their expertise and mentoring to the participants of the School.

Who should attend this Seasonal School

Highly motivated undergraduate, postgraduate as well as PhD students from different backgrounds: law, political science, management and life sciences who are interested in understanding the current challenges of Africa, from development to security issues.

Coordinator and key teaching staff

Prof. Mario Enrico Pè
Prof. Andreas de Guttry
Prof. Marco Frey
Prof. Francesco Strazzari
Prof. Eleonora Annunziata
Prof. Francesca Capone
Prof. Matteo Dell'Acqua
Prof. Francesco Lamperti
Prof. Milena Vainieri
Chiara Tea Antoniazzi, PhD
Laura Berlingozzi, PhD
Leonardo Caproni, PhD
Luca Raineri, PhD

Agent based models in Economics

Theory, toolkit, and policy laboratories



Period

July 8th-12th, 2024

Deadline for Registration

May 13th, 2024

Learning objectives

The study of economies seen as complex evolving systems has proven to be an appropriate lens of analysis to interpret and provide diagnoses of the many instances of the structure of capitalism. Heterogeneity, non-linearity, interdependent and cumulative processes, structural crises, regime changes, path-dependence and inequalities are among the key properties of both micro and macroeconomic phenomena.

Agent-based models are a powerful and growing tool to develop theoretical models disciplined by empirical evidence, able to address the complex and evolving nature of economies; additionally they constitute a natural policy laboratory enabling the possibility to perform scenarios analysis useful to inform policy choices.

The Institute of Economics of Sant'Anna School of Advanced Studies launches the second Seasonal School in "Agent based models in Economics: theory, toolkit and policy laboratories".

The Seasonal School is intended to achieve the following objectives:

- Learning of agent-based modelling techniques (ABMs) as a tool of analysis and interpretation of economic and social processes.
- Development and design of agent-based

models through software laboratories (Laboratory for Simulation Development platform).

- Introduction to statistical and econometric techniques for the analysis of macro-evolutionary agent-based models (R software).

Competencies provided include:

- Theories and applications of agent-based models in micro and macroeconomics uncovering diverse thematic areas such as technical progress, economic cycles, labour markets, economic growth, climate change.
- Empirical validation and analysis of models' parametric space.
- Scenarios-based analysis and policy experiments.

Teaching methodologies

Frontal lectures, laboratories and seminars.

Who should attend this Seasonal School?

Master and PhD students enrolled in Economics curricula. Applicants from other disciplines are welcomed.

Coordinator and key teaching staff

Coordinator: Maria Enrica Virgillito

Key teaching staff: Giovanni Dosi, Francesco Lamperti, Andrea Roventini, Giorgio Fagiolo, Alessio Moneta, Lilit Popoyan, Emanuele Russo

Gender Studies and Feminist Theory

A Multidisciplinary Perspective



Period

July 8th-13th, 2024

Deadline for Registration

May 28th, 2024

Learning objectives

The Seasonal School will delve into gender studies with a multidisciplinary critical perspective, combining different approaches in social sciences.

In order to tackle the most relevant issues in contemporary gender studies and feminist theory, participants will be provided with pivotal conceptual tools from an epistemological, political, legal and philosophical point of view as well as with a cross-cutting knowledge of the different theoretical-methodological frameworks employed in the debate.

Other than providing a theoretical-political framework on the contribution of the gender dimension in social sciences, the training programme will require participants to reflect on global and intersectional perspectives as well as on the impact of policies and politics on everyday challenges: e.g. the structural dimension gender-based violence, sexual and reproductive health and rights (SRHR), the emerging of situated needs for different subjectivities in public and collective space. The aim of the Seasonal School is to enable students to understand the impact of such challenges on the society as a whole, from a political, legal and social perspective, raising a critical attitude informed by a feminist intersectional standpoint.

Teaching methodologies

Students will benefit from a varied and cross-disciplinary learning environment with teaching activities characterized by interactive learning and participative methodologies. Several external academic experts as well as practitioners working in civil society organizations will participate to the program with workshops that will further explore the themes addressed in class. Other complementary activities such as movie-screenings and team-building games will be held as to encourage interaction and discussion among the participants.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds (e.g. philosophy and humanities, anthropology, law, political science, economics, sociology, history, but also students in applied sciences) who are interested in gender studies and feminist theories.

Coordinator and key teaching staff

Scientific Coordinator: Professor Anna Loretoni;

Education Activities Coordinators: Federica Merenda, Ilaria Santoemma;

Key Teaching Staff: Anna Loretoni, Barbara Henry, Elena Vivaldi, Federica Merenda, Ilaria Santoemma.

Economics of Innovation and Technological Change



Period

July 15th-19th, 2024

Deadline for Registration

May 20th, 2024

Learning objectives

The Seasonal School programme on “Economics of Innovation and Technological Change” addresses both the theoretical and the empirical underpinnings of the economics of innovation and technical change, as well as recent debates at the frontier of the field. The topics covered include: technological paradigms and trajectories, innovation and firm strategies, sectoral patterns of innovation, analysis of patent data, innovation and economic growth, innovation and competitiveness, innovation and intellectual property rights. The programme also offers an overview of statistical methods and techniques aimed at analysing relevant empirical data for innovation studies. Students will gain frameworks and tools to understand key-issues in this field: how do we measure innovation? How do firms exploit innovation in different sectors? What is the connection between intellectual property rights regimes and innovation? Which are the most effective tools to foster innovation in different contexts?

Teaching methodologies

Students will engage with and will learn from full-time professors from the Sant’Anna Institute of Economics through a mix of lecture-based and laboratory classes.

Who should attend this Seasonal School?

Advanced undergraduate and Master’s students, notably in Economics and Social Sciences.

Coordinator and key teaching staff

Coordinator: Prof. Daniele Moschella

Key teaching staff: Prof. Giovanni Dosi, Prof. Arianna Martinelli, Prof. Andrea Mina, Prof. Alessandro Nuvolari, Prof. Federico Tamagni, Prof. Giulio Bottazzi

BEEP

Biology for human space exploration

Period

July 22nd-26th, 2024

Deadline for Registration

June 10th, 2024

Learning objectives

The Seasonal School will offer an overview of specific topics of experimental biology and biomedicine in support of human exploration of space.

With the dawn of commercial access and exploitation of space, the major space agencies including the Italian Space Agency and the European Space Agency are planning, with industrial support and investments, outposts for human crews to live and work in space.

This course represents a unique opportunity to learn about how space exploration has provided experimental biology a new and unprecedented way to study life, and also will highlight the most compelling issues for a safe and productive inhabiting of space.

Moreover, since space exploration is by definition a collective endeavor, it will be discussed how work in space may represent an inclusive opportunity.

Teaching methodologies

Multidisciplinary seminars and lecturers from Academia as well as from space agency and industry will introduce the most critical biomedical challenges to human space exploration, in a lively, interactive environment. Topics include gravitational biology, with reference to molecular and cell

biology for microgravity and hypergravity; physiology and chronobiology in extreme environments; ground simulations of microgravity; hibernation for long duration missions; a broad overview of life support systems: from robotics applied to telemedicine for remote medical interventions, to production of vegetable foods, fertilization of extraterrestrial soil, architectures for humans on celestial bodies. A site visit to Kayser Italia, srl (Livorno) will end the course, with demonstration of hardware and software for biology and physiology experiments in space missions.

Who should attend this Seasonal School

Undergraduate, postgraduate and PhD students from different backgrounds (e.g. biology, medicine, engineering) who are interested in understanding the key issues of biology and biomedicine in support of human space exploration.

Coordinator and key teaching staff

Coordinator: Debora Angeloni

Key teaching staff: Debora Angeloni, Valentina Colla, Matteo Dell'Acqua, Antonio Frisoli, Alberto Giannoni, Anna Mensuali, Claudio Passino, Chiara Pucciariello, Donato Romano.



Contacts:
seasonalschools@santannapisa.it
santannapisa.it/en/seasonal-schools
+39 050 883204/3275

