SETTORI ERC

Social Sciences and Humanities

**SH1 Individuals, institutions and markets: economics, finance and management**
- SH1.1 Macroeconomics, growth, business cycles
- SH1.2 Microeconomics, institutional economics
- SH1.3 Econometrics, statistical methods
- SH1.4 Financial markets, banking and corporate finance
- SH1.5 Competitiveness, innovation, research and development
- SH1.6 Consumer choice, behavioural economics, marketing
- SH1.7 Organization studies, strategy
- SH1.8 Human resource management, employment and earnings
- SH1.9 Public administration, public economics
- SH1.10 Income distribution, poverty
- SH1.11 International trade, economic geography
- SH1.12 Economic history, development

**SH2 Institutions, values, beliefs and behaviour: sociology, social anthropology, political science, law, communication, social studies of science and technology**
- SH2.1 Social structure, inequalities, social mobility
- SH2.2 Ageing, work, social policies
- SH2.3 Kinship, cultural dimensions of classification and cognition, individual and social identity, gender
- SH2.4 Myth, ritual, symbolic representations, religious studies
- SH2.5 Ethnography
- SH2.6 Globalization, migration, interethnic relations
- SH2.7 Transformation of societies, democratization, social movements
- SH2.8 Political systems, legitimacy of governance
- SH2.9 Legal systems, constitutions, foundations of law
- SH2.10 Private, public and social law
- SH2.11 Global and transnational governance, international law, human rights
- SH2.12 Communication networks, media, information society
- SH2.13 Social studies of science and technology, S&T policies, science and society
- SH2.14 History of science and technology

**SH3 Environment and society: environmental studies, demography, social geography, urban and regional studies**
- SH3.1 Environment and sustainability
- SH3.2 Environmental regulation and mediation
- SH3.3 Social and industrial ecology
- SH3.4 Geographical information systems, cartography
- SH3.5 Human and social geography
- SH3.6 Spatial and regional planning
- SH3.7 Population dynamics
- SH3.8 Urbanization and urban planning, cities
- SH3.9 Mobility and transportation

**SH4 The Human Mind and its complexity: cognition, psychology, linguistics, philosophy and education**
- SH4.1 Evolution of mind and cognitive functions, animal communication
- SH4.2 Human life-span development
- SH4.3 Neuropsychology and cognitive psychology
- SH4.4 Clinical and experimental psychology,
- SH4.5 Formal, cognitive, functional and computational linguistics
- SH4.6 Typological, historical and comparative linguistics
- SH4.7 Acquisition and knowledge of language: psycholinguistics, neurolinguistics
- SH4.8 Use of language: pragmatics, sociolinguistics, discourse analysis
- SH4.9 second language teaching and learning, language pathologies, lexicography,
| SH4.10 Philosophy, history of philosophy |
| SH4.11 Epistemology, logic, philosophy of science |
| SH4.12 Ethics and morality, bioethics |
| SH4.13 Education: principles, techniques, typologies |

**SH5 Cultures and cultural production:** literature, visual and performing arts, music, cultural and comparative studies

- SH5.1 Classics
- SH5.2 History of literature
- SH5.3 Literary theory and comparative literature, literary styles
- SH5.4 Textual philology and palaeography
- SH5.5 Visual arts
- SH5.6 Performing arts
- SH5.7 Museums and exhibitions
- SH5.8 Numismatics, epigraphy
- SH5.9 Music and musicology, history of music
- SH5.10 History of art and architecture
- SH5.11 Cultural studies, cultural diversity
- SH5.12 Cultural memory, intangible cultural heritage

**SH6 The study of the human past:** archaeology, history and memory

- SH6.1 Archaeology, archaemetry, landscape archaeology
- SH6.2 Prehistory and protohistory
- SH6.3 Ancient history, ancient cultures
- SH6.4 Medieval history
- SH6.5 Modern and contemporary history
- SH6.6 Colonial history, entangled histories, global history
- SH6.7 Military history,
- SH6.8 Historiography, theory and methods of history
- SH6.9 History of ideas, intellectual history
- SH6.10 Social, economic, cultural and political history
- SH6.11 Collective memories, identities, lieux de mémoire, oral history
- SH6.12 Cultural heritage

**Mathematics, physical sciences, information and communication, engineering, universe and earth sciences**

**PE1 Mathematical foundations:** all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics

- PE1.1 Logic and foundations
- PE1.2 Algebra
- PE1.3 Number theory
- PE1.4 Algebraic and complex geometry
- PE1.5 Geometry
- PE1.6 Topology
- PE1.7 Lie groups, Lie algebras
- PE1.8 Analysis
- PE1.9 Operator algebras and functional analysis
- PE1.10 ODE and dynamical systems
- PE1.11 Partial differential equations
- PE1.12 Mathematical physics
- PE1.13 Probability and statistics
- PE1.14 Combinatorics
- PE1.15 Mathematical aspects of computer science
- PE1.16 Numerical analysis and scientific computing
- PE1.17 Control theory and optimization
- PE1.18 Application of mathematics in sciences
PE2 Fundamental constituents of matter: particle, nuclear, plasma, atomic, molecular, gas, and optical physics
PE2_1 Fundamental interactions and fields
PE2_2 Particle physics
PE2_3 Nuclear physics
PE2_4 Nuclear astrophysics
PE2_5 Gas and plasma physics
PE2_6 Electromagnetism
PE2_7 Atomic, molecular physics
PE2_8 Optics and quantum optics
PE2_9 Lasers and laser physics
PE2_10 Acoustics
PE2_11 Relativity
PE2_12 Classical physics
PE2_13 Thermodynamics
PE2_14 Non-linear physics
PE2_15 General physics
PE2_16 Metrology and measurement
PE2_17 Statistical physics (gases)

PE3 Condensed matter physics: structure, electronic properties, fluids, nanosciences
PE3_1 Structure of solids and liquids
PE3_2 Mechanical and acoustical properties of condensed matter
PE3_3 Thermal properties of condensed matter
PE3_4 Transport properties of condensed matter,
PE3_5 Electronic properties of materials and transport
PE3_6 Lattice dynamics
PE3_7 Semiconductors
PE3_8 Superconductivity
PE3_9 Superfluids
PE3_10 Spintronics
PE3_11 Magnetism
PE3_12 Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
PE3_13 Mesoscopic physics
PE3_14 Molecular electronics
PE3_15 Soft condensed matter (liquid crystals…)
PE3_16 Fluid dynamics (physics)
PE3_17 Statistical physics (condensed matter)
PE3_18 Phase transitions, phase equilibria
PE3_19 Biophysics

PE4 Physical and Analytical Chemical sciences: analytical chemistry, chemical theory, physical chemistry/chemical physics
PE4_1 Physical chemistry
PE4_2 Nanochemistry
PE4_3 Spectroscopic and spectrometric techniques
PE4_4 Molecular architecture and Structure
PE4_5 Surface science
PE4_6 Analytical chemistry
PE4_7 Chemical physics
PE4_8 Chemical instrumentation
PE4_9 Electrochemistry, electrodialysis, microfluidics
PE4_10 Combinatorial chemistry
PE4_11 Method development in chemistry
PE4_12 Catalysis
PE4_13 Physical chemistry of biological systems
PE4_14 Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_15 Theoretical and computational chemistry
PE4_16 Radiation chemistry
PE4_17 Nuclear chemistry
PE4_18 Photochemistry

**PE5 Materials and Synthesis:** materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry
- PE5_1 Structural properties of materials
- PE5_2 Solid state materials
- PE5_3 Surface modification
- PE5_4 Thin films
- PE5_5 Corrosion
- PE5_6 Porous materials
- PE5_7 Ionic liquids
- PE5_8 New materials: oxides, alloys, composite, organic-inorganic hybrid, superconductors
- PE5_9 Materials for sensors
- PE5_10 Nanomaterials: nanoparticles, nanotubes
- PE5_11 Biomaterials synthesis
- PE5_12 Intelligent materials – self assembled materials
- PE5_13 Environment chemistry
- PE5_14 Coordination chemistry
- PE5_15 Colloid chemistry
- PE5_16 Biological chemistry
- PE5_17 Chemistry of condensed matter
- PE5_18 Homogeneous and heterogeneous catalysis
- PE5_19 Characterization methods of materials
- PE5_20 Macromolecular chemistry,
- PE5_21 Polymer chemistry
- PE5_22 Supramolecular chemistry
- PE5_23 Organic chemistry
- PE5_24 Molecular chemistry

**PE6 Computer science and informatics:** informatics and information systems, computer science, scientific computing, intelligent systems
- PE6_1 Computer architecture
- PE6_2 Database management
- PE6_3 Formal methods
- PE6_4 Graphics and image processing
- PE6_5 Human computer interaction and interface
- PE6_6 Informatics and information systems
- PE6_7 Theoretical computer science including quantum information
- PE6_8 Intelligent systems
- PE6_9 Scientific computing
- PE6_10 Modelling tools
- PE6_11 Multimedia
- PE6_12 Parallel and Distributed Computing
- PE6_13 Speech recognition
- PE6_14 Systems and software

**PE7 Systems and communication engineering:** electronic, communication, optical and systems engineering
- PE7_1 Control engineering
- PE7_2 Electrical and electronic engineering: semiconductors, components, systems
- PE7_4 Simulation engineering and modelling
- PE7_5 Systems engineering, sensorics, actorics, automation
- PE7_6 Micro- and nanoelectronics, optoelectronics
- PE7_7 Communication technology, high-frequency technology
- PE7_8 Signal processing
- PE7_9 Networks
- PE7_10 Man-machine-interfaces
- PE7_11 Robotics
PE8 Products and process engineering: product design, process design and control, construction methods, civil engineering, energy systems, material engineering
PE8_1 Aerospace engineering
PE8_2 Chemical engineering, technical chemistry
PE8_3 Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment
PE8_4 Computational engineering
PE8_5 Fluid mechanics, hydraulic-, turbo-, and piston engines
PE8_6 Energy systems (production, distribution, application)
PE8_7 Micro(system) engineering,
PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
PE8_9 Materials engineering (biomaterials, metals, ceramics, polymers, composites, …)
PE8_10 Production technology, process engineering
PE8_11 Product design, ergonomics, man-machine interfaces
PE8_12 Lightweight construction, textile technology
PE8_13 Industrial bioengineering
PE8_14 Industrial biofuel production

PE9 Universe sciences: astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology; space science, instrumentation
PE9_1 Solar and interplanetary physics
PE9_2 Planetary systems sciences
PE9_3 Interstellar medium
PE9_4 Formation of stars and planets
PE9_5 Astrobiology
PE9_6 Stars and stellar systems
PE9_7 The Galaxy
PE9_8 Formation and evolution of galaxies
PE9_9 Clusters of galaxies and large scale structures
PE9_10 High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11 Relativistic astrophysics
PE9_12 Dark matter, dark energy
PE9_13 Gravitational astronomy
PE9_14 Cosmology
PE9_15 Space Sciences
PE9_16 Very large data bases: archiving, handling and analysis
PE9_17 Instrumentation - telescopes, detectors and techniques
PE9_18 Solar planetology

PE10 Earth system science: physical geography, geology, geophysics, meteorology, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management
PE10_1 Atmospheric chemistry, atmospheric composition, air pollution
PE10_2 Meteorology, atmospheric physics and dynamics
PE10_3 Climatology and climate change
PE10_4 Terrestrial ecology, land cover change,
PE10_5 Geology, tectonics, volcanology,
PE10_6 Paleoclimatology, paleoecology
PE10_7 Physics of earth’s interior, seismology, volcanology
PE10_8 Oceanography (physical, chemical, biological)
PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics,
PE10_12 Sedimentology, soil science, palaeontology, earth evolution
PE10_13 Physical geography
PE10_14 Physical geography
PE10_15 Earth observations from space/remote sensing
PE10_16 Geomagnetism, paleomagnetism
PE10_17 Ozone, upper atmosphere, ionosphere
PE10_18 Hydrology, water and soil pollution
Life Sciences

**LS1 Molecular and Structural Biology and Biochemistry:** molecular biology, biochemistry, biophysics, structural biology, biochemistry of signal transduction

LS1_1 Molecular biology and interactions
LS1_2 General biochemistry and metabolism
LS1_3 DNA biosynthesis, modification, repair and degradation
LS1_4 RNA synthesis, processing, modification and degradation
LS1_5 Protein synthesis, modification and turnover
LS1_6 Biophysics
LS1_7 Structural biology (crystallography, NMR, EM)
LS1_8 Biochemistry of signal transduction

**LS2 Genetics, Genomics, Bioinformatics and Systems Biology:** genetics, population genetics, molecular genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology

LS2_1 Genomics, comparative genomics, functional genomics
LS2_2 Transcriptomics
LS2_3 Proteomics
LS2_4 Metabolomics
LS2_5 Glycomics
LS2_6 Molecular genetics, reverse genetics and RNAi
LS2_7 Quantitative genetics
LS2_8 Epigenetics and gene regulation
LS2_9 Genetic epidemiology
LS2_10 Bioinformatics
LS2_11 Computational biology
LS2_12 Biostatistics
LS2_13 Systems biology
LS2_14 Biological systems analysis, modelling and simulation

**LS3 Cellular and Developmental Biology:** cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals

LS3_1 Morphology and functional imaging of cells
LS3_2 Cell biology and molecular transport mechanisms
LS3_3 Cell cycle and division
LS3_4 Apoptosis
LS3_5 Cell differentiation, physiology and dynamics
LS3_6 Organelle biology
LS3_7 Cell signalling and cellular interactions
LS3_8 Signal transduction
LS3_9 Development, developmental genetics, pattern formation and embryology in animals
LS3_10 Development, developmental genetics, pattern formation and embryology in plants
LS3_11 Cell genetics
LS3_12 Stem cell biology

**LS4 Physiology, Pathophysiology and Endocrinology:** organ physiology, pathophysiology, endocrinology, metabolism, ageing, regeneration, tumorigenesis, cardiovascular disease, metabolic syndrome

LS4_1 Organ physiology
LS4_2 Comparative physiology
LS4_3 Endocrinology
LS4_4 Ageing
LS4_5 Metabolism, biological basis of metabolism related disorders
LS4_6 Cancer and its biological basis
LS4_7 Cardiovascular diseases
LS4_8 Non-communicable diseases (except for neural/psychiatric, immunity-related,
metabolism-related disorders, cancer and cardiovascular diseases)

**LS5 Neurosciences and neural disorders:** neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological disorders, psychiatry
LS5_1 Neuroanatomy and neurosurgery
LS5_2 Neurophysiology
LS5_3 Neurochemistry and neuropharmacology
LS5_4 Sensory systems (e.g. visual system, auditory system)
LS5_5 Mechanisms of pain
LS5_6 Developmental neurobiology
LS5_7 Cognition (e.g. learning, memory, emotions, speech)
LS5_8 Behavioral neuroscience (e.g. sleep, consciousness, handedness)
LS5_9 Systems neuroscience
LS5_10 Neuroimaging and computational neuroscience
LS5_11 Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)
LS5_12 Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive-compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)

**LS6 Immunity and infection:** immunobiology, aetiology of immune disorders, microbiology, virology, parasitology, global and other infectious diseases, population dynamics of infectious diseases, veterinary medicine
LS6_1 Innate immunity
LS6_2 Adaptive immunity
LS6_3 Phagocytosis and cellular immunity
LS6_4 Immunosignalling
LS6_5 Immunological memory and tolerance
LS6_6 Immunogenetics
LS6_7 Microbiology
LS6_8 Virology
LS6_9 Bacteriology
LS6_10 Parasitology
LS6_11 Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)
LS6_12 Biological basis of immunity related disorders
LS6_13 Veterinary medicine

**LS7 Diagnostic tools, therapies and public health:** aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics
LS7_1 Medical engineering and technology
LS7_2 Diagnostic tools (e.g. genetic, imaging)
LS7_3 Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
LS7_4 Analgesia
LS7_5 Toxicology
LS7_6 Gene therapy, stem cell therapy, regenerative medicine
LS7_7 Surgery
LS7_8 Radiation therapy
LS7_9 Health services, health care research
LS7_10 Public health and epidemiology
LS7_11 Environment and health risks including radiation
LS7_12 Occupational medicine
LS7_13 Medical ethics

**LS8 Evolutionary, population and environmental biology:** evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, prokaryotic biology
LS8_1 Ecology (theoretical, community, population, microbial, evolutionary ecology)
LS8_2 Population biology, population dynamics, population genetics, plant-animal interactions
LS8_3 Systems eEvolution, biological adaptation, phylogenetics, systematics
LS8_4 Biodiversity, comparative biology
LS8_5 Conservation biology, ecology, genetics
LS8_6 Biogeography
LS8_7 Animal behaviour (behavioural ecology, animal communication)
LS8_8 Environmental and marine biology
LS8_9 Environmental toxicology
LS8_10 Prokaryotic biology
LS8_11 Symbiosis

LS9 Applied life sciences and biotechnology: agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences; environmental biotechnology and remediation
LS9_1 Genetic engineering, transgenic organisms, recombinant proteins, biosensors
LS9_2 Synthetic biology and new bio-engineering concepts
LS9_3 Agriculture related to animal husbandry, dairying, livestock raising
LS9_4 Aquaculture, fisheries
LS9_5 Agriculture related to crop production, soil biology and cultivation, applied plant biology