For the planning and operation of the evaluation of ERC grant proposals by panels, the following panel structure applies. There are 25 ERC panels to cover all fields of science, engineering and scholarship assigned to three research domains: Social Sciences and Humanities (6 Panels, SH1–SH6), Physical Sciences and Engineering (10 Panels, PE1–PE10), Life Sciences (9 Panels, LS1–LS9).

The panel names are accompanied by a list of panel descriptors indicating the fields of research covered by the respective ERC panels.

**Social Sciences and Humanities**

<table>
<thead>
<tr>
<th>SH1</th>
<th>Individuals, institutions and markets: economics, finance and management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SH1_1 Macroeconomics, growth, business cycles</td>
</tr>
<tr>
<td></td>
<td>SH1_2 Microeconomics, institutional economics</td>
</tr>
<tr>
<td></td>
<td>SH1_3 Econometrics, statistical methods</td>
</tr>
<tr>
<td></td>
<td>SH1_4 Financial markets, banking and corporate finance</td>
</tr>
<tr>
<td></td>
<td>SH1_5 Competitiveness, innovation, research and development</td>
</tr>
<tr>
<td></td>
<td>SH1_6 Consumer choice, behavioural economics, marketing</td>
</tr>
<tr>
<td></td>
<td>SH1_7 Organization studies, strategy</td>
</tr>
<tr>
<td></td>
<td>SH1_8 Human resource management, employment and earnings</td>
</tr>
<tr>
<td></td>
<td>SH1_9 Public administration, public economics</td>
</tr>
<tr>
<td></td>
<td>SH1_10 Income distribution, poverty</td>
</tr>
<tr>
<td></td>
<td>SH1_11 International trade, economic geography</td>
</tr>
<tr>
<td></td>
<td>SH1_12 Economic history, development</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SH2</th>
<th>Institutions, values, beliefs and behaviour: sociology, social anthropology, political science, law, communication, social studies of science and technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SH2_1 Social structure, inequalities, social mobility</td>
</tr>
<tr>
<td></td>
<td>SH2_2 Ageing, work, social policies</td>
</tr>
<tr>
<td></td>
<td>SH2_3 Kinship, cultural dimensions of classification and cognition, individual and social identity, gender</td>
</tr>
<tr>
<td></td>
<td>SH2_4 Myth, ritual, symbolic representations, religious studies</td>
</tr>
<tr>
<td></td>
<td>SH2_5 Ethnography</td>
</tr>
<tr>
<td></td>
<td>SH2_6 Globalization, migration, interethnic relations</td>
</tr>
<tr>
<td></td>
<td>SH2_7 Transformation of societies, democratization, social movements</td>
</tr>
<tr>
<td></td>
<td>SH2_8 Political systems, legitimacy of governance</td>
</tr>
<tr>
<td></td>
<td>SH2_9 Legal systems, constitutions, foundations of law</td>
</tr>
<tr>
<td></td>
<td>SH2_10 Private, public and social law</td>
</tr>
<tr>
<td></td>
<td>SH2_11 Global and transnational governance, international law, human rights</td>
</tr>
<tr>
<td></td>
<td>SH2_12 Communication networks, media, information society</td>
</tr>
<tr>
<td></td>
<td>SH2_13 Social studies of science and technology, S&amp;T policies, science and society</td>
</tr>
<tr>
<td></td>
<td>SH2_14 History of science and technology</td>
</tr>
</tbody>
</table>
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, terminology
   - 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, archaeometry, 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**  
- Acoustics
- Relativity
- Classical physics
- Thermodynamics
- Non-linear physics
- General physics
- Metrology and measurement
- Statistical physics (gases)

**PE3**  
*Condensed matter physics:* structure, electronic properties, fluids, nanosciences  
- Structure of solids and liquids
- Mechanical and acoustical properties of condensed matter
- Thermal properties of condensed matter
- Transport properties of condensed matter
- Electronic properties of materials and transport
- Lattice dynamics
- Semiconductors
- Superconductivity
- Superfluids
- Spintronics
- Magnetism
- Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
- Mesoscopic physics
- Molecular electronics
- Soft condensed matter (liquid crystals…)
- Fluid dynamics (physics)
- Statistical physics (condensed matter)
- Phase transitions, phase equilibria
- Biophysics

**PE4**  
*Physical and Analytical Chemical sciences:* analytical chemistry, chemical theory, physical chemistry/chemical physics  
- Physical chemistry
- Nanochemistry
- Spectroscopic and spectrometric techniques
- Molecular architecture and Structure
- Surface science
- Analytical chemistry
- Chemical physics
- Chemical instrumentation
- Electrochemistry, electrodialysis, microfluidics
- Combinatorial chemistry
- Method development in chemistry
- Catalysis
- Physical chemistry of biological systems
- 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
<table>
<thead>
<tr>
<th>PE6.13 Speech recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE6.14 Systems and software</td>
</tr>
</tbody>
</table>

**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, sensors, actuators, 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_13 Sedimentology, soil science, palaeontology, earth evolution  
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
<table>
<thead>
<tr>
<th>LS7_9</th>
<th>Health services, health care research</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS7_10</td>
<td>Public health and epidemiology</td>
</tr>
<tr>
<td>LS7_11</td>
<td>Environment and health risks including radiation</td>
</tr>
<tr>
<td>LS7_12</td>
<td>Occupational medicine</td>
</tr>
<tr>
<td>LS7_13</td>
<td>Medical ethics</td>
</tr>
</tbody>
</table>

**LS8  Evolutionary, population and environmental biology:** evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, prokaryotic biology

<table>
<thead>
<tr>
<th>LS8_1</th>
<th>Ecology (theoretical, community, population, microbial, evolutionary ecology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS8_2</td>
<td>Population biology, population dynamics, population genetics, plant-animal interactions</td>
</tr>
<tr>
<td>LS8_3</td>
<td>Systems evolution, biological adaptation, phylogenetics, systematics</td>
</tr>
<tr>
<td>LS8_4</td>
<td>Biodiversity, comparative biology</td>
</tr>
<tr>
<td>LS8_5</td>
<td>Conservation biology, ecology, genetics</td>
</tr>
<tr>
<td>LS8_6</td>
<td>Biogeography</td>
</tr>
<tr>
<td>LS8_7</td>
<td>Animal behaviour (behavioural ecology, animal communication)</td>
</tr>
<tr>
<td>LS8_8</td>
<td>Environmental and marine biology</td>
</tr>
<tr>
<td>LS8_9</td>
<td>Environmental toxicology</td>
</tr>
<tr>
<td>LS8_10</td>
<td>Prokaryotic biology</td>
</tr>
<tr>
<td>LS8_11</td>
<td>Symbiosis</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>LS9_1</th>
<th>Genetic engineering, transgenic organisms, recombinant proteins, biosensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS9_2</td>
<td>Synthetic biology and new bio-engineering concepts</td>
</tr>
<tr>
<td>LS9_3</td>
<td>Agriculture related to animal husbandry, dairying, livestock raising</td>
</tr>
<tr>
<td>LS9_4</td>
<td>Aquaculture, fisheries</td>
</tr>
<tr>
<td>LS9_5</td>
<td>Agriculture related to crop production, soil biology and cultivation, applied plant biology</td>
</tr>
<tr>
<td>LS9_6</td>
<td>Food sciences</td>
</tr>
<tr>
<td>LS9_7</td>
<td>Forestry, biomass production (e.g. for biofuels)</td>
</tr>
<tr>
<td>LS9_8</td>
<td>Environmental biotechnology, bioremediation, biodegradation</td>
</tr>
<tr>
<td>LS9_9</td>
<td>Biotechnology, bioreactors, applied microbiology</td>
</tr>
<tr>
<td>LS9_10</td>
<td>Biomimetics</td>
</tr>
<tr>
<td>LS9_11</td>
<td>Biohazards, biological containment, biosafety, biosecurity</td>
</tr>
</tbody>
</table>