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Life sciences
and medicine

dscb

Department of
Clinical and
Biological Sciences

Located in modern premises within the *San Luigi Gonzaga* Hospital, the Department carries out basic and top ranked clinical research in areas ranging from cell biology to molecular biology. Further key research areas focus on the central nervous system, oxidative mechanisms, physiology and clinical pharmacology, regenerative medicine, nanotechnologies and genetic disease.

— www.dscb.unito.it

Main Research Areas

- Molecular and cellular biology
- Stem cells and regenerative medicine
- Metabolic diseases, rare diseases
- Neuroscience
- Health, society, clinical epidemiology and biostatics
- Genomics and bioinformatics

dbios

Department
of Life Sciences
and Systems
Biology

The Department carries out teaching and research in biology, environmental science and biotechnology, with special focus on areas such as biodiversity, ecology, evolution, conservation and microbiology. It coordinates its various research groups and manages research facilities such as the Botanical Garden and the Herbarium.

— www.dbios.unito.it

Main Research Areas

- Life and health
- Biochemistry and biotechnology
- Ecology and evolution

dsm

Department of
Medical Sciences

The Department brings together multidisciplinary groups working on clinical, preclinical and basic research, in areas such as diagnosis, pathogenesis, physiopathology, genetics and therapy for systemic and organ-specific diseases. Research groups are committed to creating common funding projects and sharing technologies with industry.

— www.dsm.unito.it

Main Research Areas

- Translational and clinical research: pathophysiological mechanism of common and rare diseases, diagnosis and treatment
- Epidemiology and risk factors
- Transplants and regenerative medicine
- Innovative diagnosis and molecular imaging



dbmss

Department of Molecular Biotechnologies and Health Sciences

Departmental research focuses on molecular events underlying pathophysiological processes, and takes a translational medicine approach. Combining basic research and clinical research to develop translational paradigms, the Department seeks to develop advanced diagnostic technologies and innovative therapeutic strategies for clinical practice.

— www.dbmss.unito.it

Main Research Areas

- Molecular and cellular mechanism of metabolic diseases, cardiovascular, oncologic and degenerative diseases
- Stem cells and regenerative medicine
- Computational genomics
- New diagnostic imaging technologies and advanced chemical methodologies
- Pre-clinical and clinical testing of new therapeutic protocols



dns

Department of Neurosciences

Research groups within the Department carry out research work in a wide range of areas, in particular neuronal plasticity, regeneration, endocrinology, and neuro-degeneration. The Department also provides healthcare science services in 3 clinics and in prestigious units in *Città della Salute e della Scienza*, Europe's largest medical centre.

— www.neuroscienze.unito.it

Main Research Areas

- Micro- meso- and macro-connectomics
- Neurodegenerative diseases
- Psychiatric disorders
- Neurobiology of sexual dimorphism
- The placebo effect

donc

Department of Oncology

The Department, located in the *San Luigi Gonzaga* Hospital, focuses on preclinical, translational and clinical research in cancerous pathology. As a medical department, it promotes the knowledge transfer both to courses and to hospital services.

— www.oncology.unito.it

Main Research Areas

- Thoracic cancers
- Gastrointestinal cancer
- Tumour microenvironment
- Biomarkers
- Oncogenomics
- Targeted therapies

d s s p p

Department
of Public Health
and Pediatrics

17 research groups and over 10 laboratories carry out research and teaching within the Department, in a wide range of areas, including hygienics and microbiology, medical statistics, child and adolescent psychiatry, and forensic pathology. The Department, located in the *Città della Salute e della Scienza* medical centre, also provides healthcare services.

— www.dsspp.unito.it

Main Research Areas

- Physical anthropology
- Bacteriology and mycology
- Cytoimmunodiagnostics
- Pediatric haematology
- Clinical epidemiology
- Medical epidemiology and statistics
- Environmental hygiene
- Immunology
- Viral infections
- Health promotion
- Criminology
- Serology and microbiology
- Cadaver studies
- Virology

d s c

Department of
Surgical Sciences

The Department promotes innovative research projects, adopting a multidisciplinary approach that includes general and specialist surgery, anaesthesia, radiology, and dentistry. As a medical department located in *Città della Salute e della Scienza* medical centre, it provides training in a wide range of clinical and healthcare areas. In addition, the Department is a key advisor for local public health institutions.

— www.dsc.unito.it

Main Research Areas

- New technologies in surgery
- Maternal foetal medicine
- Organ transplantation
- Interventional radiology
- Respiratory diseases
- Disability and rehabilitation

d s v

Department
of Veterinary
Sciences

The Department is committed to excellence in teaching and research in various areas of veterinary science, with a special focus on the welfare and health of animals, humans and the environment. The Department is located on the outskirts of Torino, and has a teaching and experimental farm and a dog pound.

— www.veterinaria.unito.it

Main Research Areas

- Veterinary anatomy and physiology
- Animal diseases, pathology and epidemiology
- Food safety
- Veterinary medicine, surgery and reproduction
- Animal genetics and nutrition
- Pharmacology and toxicology



Life sciences
and medicine

**Agricultural, forest and
food sciences**

**Drug science and
technology**

Natural sciences
and technology

disafa

Department
of Agricultural,
Forest and Food
Sciences

The Department carries out research and teaching in the areas of plant and animal-based primary production and transformation processes, and in the interaction of such activities with the environment. Research in agricultural, forest and food sciences is focused on the needs of fast-changing societies, and benefits from a multidisciplinary approach.

— www.disafa.unito.it

Main Research Areas

- Food production and science
- Plant physiology and production
- Plant pathology and pest control
- Forestry and land conservation
- Energy biomass production
- Animal production

dstf

Department of
Drug Science and
Technology

Teaching and research within the Department cover all aspects of drug discovery, from drug design, synthesis and characterisation to formulation and clinical pharmacology, using a multidisciplinary approach. The Department works with a network of national and international partners, including universities, research centres and companies.

— www.dstf.unito.it

Main Research Areas

- Drug design, synthesis and formulation
- New technologies for green and sustainable chemical processes
- Phyto-extraction and phyto-chemical analysis
- Nanotechnology and microencapsulation for pharmaceutical and cosmetic applications





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Natural sciences and technology



Department
of Chemistry

The Department’s multi-disciplinary research activities, ranging from analytical and environmental chemistry to industrial chemistry and metallurgy, focus on the underlying foundations of chemical science related phenomena. The Department promotes cooperation and joint research projects with partners both within and outside the University.

— www.chimica.unito.it

- Main Research Areas**
- Analytical and environmental chemistry
 - Physical chemistry
 - Inorganic chemistry
 - Organic chemistry
 - Materials and industrial chemistry



Department
of Computer
Science

The Department is the University’s centre for coordination of research on IT, in areas such as human-computer interaction, big data analysis, and virtual reality. A number of research projects benefit from partnerships with national and international research centres and companies.

— www.di.unito.it

- Main Research Areas**
- Artificial intelligence and human-computer interaction
 - Formal methods in computing
 - Performance evaluation and system validation
 - Complex socio-technical networks and distributed systems
 - Complex systems, big data analysis and systems biology
 - Image processing and virtual reality



Department
of Earth Sciences

Teaching provided within the Department combines traditional and cutting-edge techniques in geology. Research activity covers a range of disciplines, such as chemistry, physics, natural science, genetic inheritance and biomedical science, and aims to foster interaction with civil society as well as public and private stakeholders in geology-related activities.

— www.dst.unito.it

- Main Research Areas**
- Paleontology, sedimentology, structural geology
 - Mineralogy, petrology and geochemistry
 - Geomorphology and applied geology
 - Geophysics
 - Geosites and cultural heritage



dm at

Department of Mathematics

The Department promotes research and teaching in all mathematics-related areas, including mathematical logic, geometry, history of mathematics, statistics, mathematical physics, and numerical analysis. Teaching benefits by cooperation with the School of Natural Sciences and other University Schools. The Department organises regular research seminars hosting distinguished scholars from all over the world.

— www.dipmatematica.unito.it

Main Research Areas

- Logic, history of mathematics, teaching of mathematics
- Algebra and geometry
- Mathematical analysis and probability
- Mathematical physics
- Numerical analysis

df

Department of Physics

Teaching ranges from physics, optics and optometry to extra-departmental programs in medical physics and astrophysics; research covers a broad range of areas in fundamental and applied physics, including environmental and nuclear physics. The local branch of the National Institute of Nuclear Physics (INFN) is located in the Department.

— www.df.unito.it

Main Research Areas

- Nuclear and particle physics
- Astrophysics and astroparticles
- Medical physics
- Theoretical physics
- Environmental physics and hydrodynamics
- Applied physics

PhD programs



PhD programs at UniTo

The Doctoral School of UniTo offers a wide range of PhD programs encompassing the following scientific domains:

