

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

A. Computer and Information Sciences (KFS 1442)

- Artificial intelligence
- Computer and information technology administration and management
- Computer science
- Computer software and media applications
- Computer systems analysis
- Computer systems networking and telecommunications
- Data processing
- Information sciences, studies
- Information technology
- ~~Management information systems~~ (*moved to Non-S&E Fields, Business Management and Business Administration*)

B. Engineering

1. Aerospace, Aeronautical, and Astronautical Engineering (KFS 1411)

- Aerodynamics
- Aerospace engineering
- Space technology

2. Bioengineering and Biomedical Engineering (KFS 1418)

- Biological and biosystems engineering
- Biomaterials engineering
- Biomedical technology
- Medical engineering

3. Chemical Engineering (KFS 1412)

- Biochemical engineering
- Chemical and biomolecular engineering
- Engineering chemistry
- Paper science
- ~~Petroleum engineering~~ (*moved to Other Engineering*)
- Petroleum refining process
- Polymer, plastics engineering
- ~~Wood science~~ (*moved to Life Sciences, Agricultural Sciences*)

4. Civil Engineering (KFS 1413)

- Architectural engineering
- ~~Architecture~~ (*moved to Non-S&E Fields, Other Non-S&E Fields*)
- Construction engineering
- Engineering management, administration
- Environmental, environmental health engineering
- Geotechnical and geoenvironmental engineering
- Sanitary engineering

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

- Structural engineering
- Surveying engineering
- Transportation and highway engineering
- Water resources engineering
- 5. **Electrical, Electronic, and Communications Engineering** (KFS 1414)
 - Communications engineering
 - Computer engineering
 - Computer hardware engineering
 - Computer software engineering
 - Electrical and electronics engineering
 - Laser and optical engineering
 - Power
 - Telecommunications engineering
- 6. **(NEW) Industrial and Manufacturing Engineering** (KFS 1419)
 - Industrial engineering** (*moved from Other Engineering*)
 - Manufacturing engineering** (*moved from Other Engineering*)
 - Operations research** (*moved from Mathematics and Statistics*)
 - Systems engineering** (*moved from Other Engineering*)
- 7. **Mechanical Engineering** (KFS 1415)
 - Electromechanical engineering
 - ~~Engineering mechanics~~ (*moved to Other Engineering*)
 - Mechatronics, robotics, and automation engineering
- 8. **Metallurgical and Materials Engineering** (KFS1417)
 - Ceramic sciences and engineering
 - Geophysical, geological engineering
 - Materials engineering
 - ~~Materials science~~ (*moved to Physical Sciences, Materials Science*)
 - Metallurgical engineering
 - Mining and mineral engineering
 - Textile sciences and engineering
 - Welding
- 9. **Other Engineering** (KFS 1416)
 - Agricultural engineering
 - Engineering design
 - Engineering mechanics, physics, and science** (*moved from Mechanical Engineering*)
 - Forest engineering
 - ~~Industrial engineering~~ (*moved to Industrial and Manufacturing Engineering*)
 - ~~Manufacturing engineering~~ (*moved to Industrial and Manufacturing Engineering*)
 - Nanotechnology
 - Naval architecture and marine engineering

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

Nuclear engineering

Ocean engineering

Petroleum engineering (*moved from Chemical Engineering*)

~~Systems engineering~~ (*moved to Industrial and Manufacturing Engineering*)

Other engineering fields that cannot be classified using the fields above

C. Geosciences, Atmospheric, and Ocean Sciences (previously Environmental Sciences)

1. Atmospheric Science and Meteorology (KFS 1431)

Aeronomy

Atmospheric chemistry and climatology Atmospheric physics
and dynamics Extraterrestrial atmospheres

Meteorology

Solar

Weather modification

2. Geological and Earth Sciences (KFS 1432)

~~Cartography~~ (*moved to Social Sciences, Other Social Sciences*)

Earth and planetary sciences

Geochemistry

Geodesy and gravity

Geology

Geomagnetism

Geophysics and seismology

Hydrology and water resources

Minerology and petrology

Paleomagnetism

Paleontology

Physical geography

Stratigraphy and sedimentation

Surveying

3. Ocean Sciences and Marine Sciences (KFS 1433)

Biological oceanography

Geological oceanography

Marine biology

Marine oceanography

Marine sciences

Oceanography, chemical and physical

4. Other Geosciences, Atmospheric and Ocean Sciences (KFS-1434)

Other fields that cannot be classified using the fields listed above

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

D. Life Sciences

1. Agricultural Sciences (KFS 1451)

Agricultural business and management

Agricultural chemistry

Agricultural economics (*moved from Social Sciences, Economics*)

Agricultural engineering—report in Engineering

Agricultural production operations

Animal sciences

Applied horticulture and horticultural business services

Aquaculture

~~Conservation~~ (*moved to Natural Resources and Conservation*)

Fishing and fisheries sciences and management

Food science and technology

Forestry

International agriculture

~~Landscape architecture~~ (*moved to Non S&E Fields, Other Non-S&E Fields*)

Plant sciences

~~Renewable natural resources~~ (*moved to Natural Resources and Conservation*)

Soil sciences

~~Veterinary medicine~~ (*moved to Health Sciences*)

Wood science (*moved from Engineering, Chemical Engineering*)

2. Biological and Biomedical Sciences (previously Biological Sciences) (KFS 1452)

Allergies and immunology

Biochemistry, biophysics, and molecular biology

Biogeography

Biology and biomedical sciences, general

Biomathematics, bioinformatics, and computational biology

Biotechnology

Botany and plant biology

Cell, cellular biology, and anatomical sciences

Epidemiology, ecology and population biology

~~Foods and nutrition studies~~ (*moved to Non-S&E Fields, Other Non-S&E Fields*)

Genetics

Microbiological sciences and immunology

Molecular medicine

Neurobiology and neuroscience (*moved from Health Sciences*)

~~Nutritional sciences~~ (*renamed Dietetics and clinical nutrition services and moved to Health Sciences*)

Pharmacology and toxicology

~~Physical anthropology~~ (*moved to Social Sciences, Anthropology*)

Physiology, pathology and related sciences

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

~~Veterinary medicine~~ (*moved to Health Sciences*)
Zoology, animal biology

3. Health Sciences (previously Medical Sciences) (KFS1453)

Advanced, graduate dentistry and oral sciences
Allied health and medical assisting services
Bioethics, medical ethics

Clinical/medical laboratory science/research and allied professions
(*moved from Other Life Sciences*)

Clinical medicine research (includes several medical fields that had been previously listed separately)

Communication disorders sciences and services (*moved from Other Life Sciences*)

Dentistry

Dietetics and clinical nutrition services (*previously Nutritional sciences; moved from Biological and Biomedical Sciences*)

Gerontology, health sciences (*moved from Other Life Sciences*)

Health and medical administrative services (*moved from Other Life Sciences*)

Health, medical preparatory programs

Kinesiology and exercise science

Medical clinical science, graduate medical studies

Medical illustration and informatics

Medicine

Mental health

~~Neurosciences~~ (*moved to Biological and Biomedical Sciences*)

Nursing (*moved from Other Life Sciences*)

Optometry

Osteopathic medicine, osteopathy

~~Pharmacology~~ (*moved to Biological and Biomedical Sciences*)

Pharmacy, pharmaceutical sciences, and administration

Podiatric medicine, podiatry

Public health

Radiological science

Registered nursing, nursing administration, nursing research and clinical nursing (*moved from Other Life Sciences*)

Rehabilitation and therapeutic professions (*Some subdisciplines moved from Other Life Sciences.*)

Veterinary biomedical and clinical sciences

Veterinary medicine (*Some subdisciplines moved from Agricultural Sciences or Biological and Biomedical Sciences.*)

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

4. **(NEW) Natural Resources and Conservation** (KFS 1455)

Natural resources conservation and research (*moved from Agricultural Sciences*)

Natural resources economics (*moved from Social Sciences, Economics*)

Natural resources management and policy

Renewable natural resources (*moved from Agricultural Sciences*)

Wildlife and wildlands science and management

5. Other Life Sciences (KFS 1454)

~~Clinical/medical laboratory technologies~~ (*moved to Health Sciences*)

~~Communication disorders sciences and services~~ (*moved to Health Sciences*)

~~Gerontology, health sciences~~ (*moved to Health Sciences*)

~~Health and medical administrative services~~ (*moved to Health Sciences*)

~~Nursing~~ (*moved to Health Sciences*)

~~Occupational therapy~~ (*part of Rehabilitation and therapeutic professions; moved to Health Sciences*)

~~Physical therapy~~ (*part of Rehabilitation and therapeutic professions; moved to Health Sciences*)

~~Registered nursing, nursing administration, nursing research and clinical nursing~~ (*moved to Health Sciences*)

~~Rehabilitation services~~ (*part of Rehabilitation and therapeutic professions; moved to Health Sciences*)

~~Therapeutic services~~ (*part of Rehabilitation and therapeutic professions; moved to Health Sciences*)

Other life sciences that cannot be classified using the fields listed above

E. Mathematics and Statistics (KFS 1441)

Applied mathematics

Mathematics

~~Operations research~~ (*moved to Engineering, Industrial and Manufacturing Engineering*)

Statistics

F. Physical Sciences

1. Astronomy and Astrophysics (KFS 1421)

Astronomy

Astrophysics

Planetary astronomy and science

2. Chemistry (except Biochemistry—report in Biological and Biomedical Sciences) (KFS 1422)

Analytical chemistry

Chemical physics (*moved from Physics*)

Environmental chemistry

Forensic chemistry

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

Inorganic chemistry
Organic chemistry
Organo-metallic chemistry
~~Pharmaceutical chemistry~~ (*moved to Life Sciences, Health Sciences*)
Physical chemistry
Polymer chemistry
Theoretical chemistry

3. (NEW) Materials Science (KFS 1425)

Materials chemistry
Materials science (*moved from Engineering, Metallurgical and Materials Engineering*)

4. Physics (KFS 1423)

Acoustics
Atomic, molecular physics
~~Chemical physics~~ (*moved to Chemistry*)
Condensed matter and materials physics
Elementary particle physics
Mathematical physics
Nuclear physics
Optics, optical sciences
Plasma, high-temperature physics
Theoretical physics

5. Other Physical Sciences (KFS1424)

Other physical sciences that cannot be classified using the fields listed above

G. Psychology (KFS 1460)

~~Animal behavior~~ (*part of Zoology; moved to Life Sciences, Biological and Biomedical Sciences*)
~~Art therapy~~ (*part of Rehabilitation and therapeutic professions; moved to Life Sciences, Health Sciences*)
Clinical psychology
Counseling and applied psychology
Human development
Research and experimental psychology

H. Social Sciences

1. (NEW) Anthropology (KFS 1470)

Cultural anthropology (*moved from Sociology, Demography, and Population Studies*)
Medical anthropology
Physical and biological anthropology (*moved from Life Sciences, Biological and Biomedical Sciences*)

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

2. Economics (KFS 1471)

~~Agricultural economics~~ (moved to Life Sciences, Agricultural Sciences)

Applied economics

Business development

Development economics and international development

Econometrics and quantitative economics

Industrial economics

International economics

Labor economics

Managerial economics

Public finance and fiscal policy

~~Resource economics~~ (moved to Life Sciences, Natural Resources and Conservation)

3. Political Science and Government (KFS 1472)

Comparative government

Government

~~International relations and affairs~~ (moved to Other Social Sciences)

Legal systems

Political economy

Political science

Political theory

~~Public administration~~ (moved to Non-S&E Fields, Other Non-S&E fields)

~~Public policy analysis~~ (moved to Other Social Sciences)

~~Regional studies~~ (moved to Other Social Sciences)

4. Sociology, Demography, and Population Studies (KFS 1473)

~~Anthropology, cultural and social~~ (moved to Anthropology) Comparative and historical sociology

Complex organizations

Cultural and social structure

Demography and population studies

Group interactions

Rural sociology

Social problems and welfare theory

Sociology

5. Other Social Sciences (KFS 1474)

Archeology

Area, ethnic, cultural, gender, and group studies

Cartography (moved from Geosciences, Atmospheric, and Ocean Sciences, Geological and Earth Sciences)

City, urban, community and regional planning

Criminal science and corrections

Criminology

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

Geography

Gerontology, social sciences

~~History of science~~ (moved to Non-S&E Fields, Humanities)

International relations and national security studies (moved from Political Science and Government)

Linguistics

Public policy analysis (moved from Political Science and Government)

Regional studies (moved from Political Science and Government)

Urban studies, affairs

I. Other Sciences (KFS 1480)

Use this category for R&D that involves at least one S&E field (rows A–H) if it is impossible to report multidisciplinary or interdisciplinary R&D expenditures in specific fields.

J. Non-S&E Fields

1. Education (KFS 1510)

Education administration and supervision

Education research

Teacher education, specific levels and methods

Teaching fields

2. Law (KFS 1520)

Law

Legal studies

3. Humanities (KFS 1530)

English language and literature, letters

Foreign languages and literatures

History, including history and philosophy of science and technology

Humanities, general

Liberal arts and sciences

Philosophy and religious studies

Theology and religious vocations

4. Visual and Performing Arts (KFS 1540)

Drama, theatre arts and stagecraft Film, video, and photographic arts Fine and studio arts

Music

5. Business Management and Business Administration (KFS 1550) (previously Business and Management)

Business administration

Business management

Business, managerial economics

Fields of R&D for the FY 2016 Higher Education Research and Development Survey

Management information systems and services (*moved from Computer and Information Sciences*)

Marketing management and research

6. Communication and Communications Technologies (previously Communication, Journalism, and Library Science) (KFS 1560)

Communication and media studies

Communications technologies

Journalism

~~Library science~~ (*moved to Other Non-S&E Fields*)

Radio, television, and digital communication

7. Social Work (KFS 1570)

(no specific examples)

8. Other Non-S&E Fields (KFS 1580)

Architecture (*moved from Engineering, Civil Engineering*)

Family, consumer sciences and human sciences

Foods, nutrition, and wellness studies (*moved from Life Sciences, Biological and Biomedical Sciences*)

Landscape architecture (*moved from Life Sciences, Agricultural Sciences*)

Library science (*moved from Communication and Communications Technologies*)

Military technology and applied science

Parks, sports, recreation, leisure and fitness

Public administration and public affairs (*moved from Social Sciences, Political Science and Government*)

Other non-S&E fields that cannot be classified using the fields listed above

Also, use this category for R&D that involves multiple non-S&E fields if it is impossible to report multidisciplinary or interdisciplinary R&D expenditures in specific fields.