

EXAMPLES OF DISCIPLINES UNDER EACH R&D FIELD

A. Computer and Information Sciences

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

B. Engineering

1. Aerospace, Aeronautical, and Astronautical Engineering

Aerodynamics
Aerospace engineering
Space technology

2. Bioengineering and Biomedical Engineering

Biological and biosystems
engineering
Biomaterials engineering
Biomedical technology
Medical engineering

3. Chemical Engineering

Biochemical engineering
Chemical and biomolecular
engineering
Engineering chemistry
Paper science
Petroleum refining process
Polymer, plastics engineering

4. Civil Engineering

Architectural engineering
Construction engineering
Engineering management,
administration
Environmental, environmental
health engineering
Geotechnical and
geoenvironmental engineering
Sanitary engineering
Structural engineering
Surveying engineering
Transportation and highway
engineering
Water resources engineering

5. Electrical, Electronic, and Communications Engineering

Communications engineering
Computer engineering
Computer hardware
engineering
Computer software engineering
Electrical and electronics
engineering
Laser and optical engineering
Power
Telecommunications
engineering

6. Industrial and Manufacturing Engineering

Industrial engineering
Manufacturing engineering
Operations research
Systems engineering

7. Mechanical Engineering

Electromechanical engineering
Mechatronics, robotics, and
automation engineering

8. Metallurgical and Materials Engineering

Ceramic sciences and
engineering
Geophysical, geological
engineering
Materials engineering
Metallurgical engineering
Mining and mineral engineering
Textile sciences and
engineering
Welding

9. Other Engineering

Agricultural engineering
Engineering design
Engineering mechanics,
physics, and science
Engineering physics
Engineering science
Forest engineering
Nanotechnology
Naval architecture and marine
engineering
Nuclear engineering
Ocean engineering
Petroleum engineering

Other engineering fields that
cannot be classified using the
fields listed above

C. Geosciences, Atmospheric Sciences, and Ocean Sciences

1. Atmospheric Science and Meteorology

Aeronomy
Atmospheric chemistry and
climatology
Atmospheric physics and
dynamics
Extraterrestrial atmospheres
Meteorology
Solar
Weather modification

2. Geological and Earth 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

Biological oceanography
Geological oceanography
Marine biology
Marine oceanography
Marine sciences
Oceanography, chemical and
physical

4. Other Geosciences, Atmospheric Sciences, and Ocean Sciences

Other fields that cannot be
classified using the fields listed
above

Examples of disciplines continue on next page.

D. Life Sciences

1. Agricultural Sciences

Agricultural business and management
Agricultural chemistry
Agricultural engineering—report in Engineering
Agricultural production operations
Animal sciences
Applied horticulture and horticultural business services
Aquaculture
Food science and technology
International agriculture
Plant sciences
Soil sciences
Veterinary biomedical and clinical sciences
Veterinary medicine
Wood science

2. Biological and Biomedical Sciences

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, nutrition, and wellness studies
Genetics
Microbiological sciences and immunology
Molecular medicine
Neurobiology and neuroscience
Pharmacology and toxicology
Physiology, pathology and related sciences
Zoology, animal biology

3. Health Sciences

Advanced, graduate dentistry and oral sciences
Allied health and medical assisting services
Bioethics, medical ethics
Clinical medicine research
Clinical/medical laboratory science/research and allied professions

Communication disorders sciences and services
Dentistry
Dietetics and clinical nutrition services
Health and medical administrative services
Health, medical preparatory programs
Gerontology, health sciences
Kinesiology and exercise science
Medical clinical science, graduate medical studies
Medical illustration and informatics
Medicine
Mental health
Nursing
Optometry
Osteopathic medicine, osteopathy
Pharmacy, pharmaceutical sciences, and administration
Podiatric medicine, podiatry
Public health
Radiological science

Registered nursing, nursing administration, nursing research and clinical nursing
Rehabilitation and therapeutic professions
Zoology

4. Natural Resources and Conservation

Fishing and fisheries sciences and management
Forestry
Natural resources conservation and research
Natural resources management and policy
Renewable natural resources
Wildlife and wildlands science and management

5. Other Life Sciences

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

E. Mathematics and Statistics

Applied mathematics

Mathematics

Statistics

F. Physical Sciences

1. Astronomy and Astrophysics

Astronomy
Astrophysics
Planetary astronomy and science

2. Chemistry

(except Biochemistry—report in Biological and Biomedical Sciences)
Analytical chemistry
Chemical physics
Environmental chemistry
Forensic chemistry
Inorganic chemistry
Organic chemistry
Organo-metallic chemistry
Physical chemistry
Polymer chemistry
Theoretical chemistry

3. Materials Science

Materials chemistry
Materials science

4. Physics

Acoustics
Atomic, molecular physics
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

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

G. Psychology

Clinical psychology

Counseling and applied psychology

Human development

Research and experimental psychology

Examples of disciplines continue on next page.
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H. Social Sciences

1. Anthropology

Cultural anthropology
Medical anthropology
Physical and biological anthropology

2. Economics

Agricultural economics
Applied economics
Business development
Development economics and international development
Econometrics and quantitative economics
Industrial economics
International economics
Labor economics
Managerial economics
Natural resources economics
Public finance and fiscal policy

3. Political Science and Government

Comparative government
Government
Legal systems
Political economy
Political science
Political theory

4. Sociology, Demography, and Population Studies

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

Archeology
Area, ethnic, cultural, gender, and group studies
Cartography
Criminal science and corrections
Criminology
Geography
Gerontology, social sciences
History and philosophy of science and technology
International relations and national security studies
Linguistics
Public policy analysis
Regional studies
Urban studies, affairs

I. Other Sciences

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. Business

Management and Business Administration

Business administration
Business management
Business, managerial economics
Management information systems and services
Marketing management and research

2. Communication and Communications Technologies

Communication and media studies
Communications technologies
Journalism
Radio, television, and digital communication

3. Education

Education administration and supervision
Education research
Teacher education, specific levels and methods
Teaching fields

4. Humanities

English language and literature, letters
Foreign languages and literatures
History
Humanities, general
Liberal arts and sciences
Philosophy and religious studies
Theology and religious vocations

5. Law

Law
Legal studies

6. Social Work

(no specific examples)

7. Visual and Performing Arts

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

8. Other Non-S&E Fields

Architecture
City, urban, community and regional planning
Family, consumer sciences and human sciences
Landscape architecture
Library science
Military technology and applied science
Parks, sports, recreation, leisure and fitness
Public administration and public affairs
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.