# Examples of Disciplines: Computer and Information Sciences and Engineering Fields of R&D

## A. Computer and Information Sciences

<table>
<thead>
<tr>
<th>Artificial intelligence</th>
<th>Computer software and media applications</th>
<th>Data processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer and information technology administration and management</td>
<td>Computer systems analysis</td>
<td>Information sciences, studies</td>
</tr>
<tr>
<td>Computer science</td>
<td>Computer systems networking</td>
<td>Information technology</td>
</tr>
</tbody>
</table>

## 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

# Examples of Disciplines: Geosciences, Atmospheric Sciences, and Ocean Sciences Fields of R&D

## 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
   - Mineralogy 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: Life Sciences Fields of R&D

<table>
<thead>
<tr>
<th>D. Life Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agricultural Sciences</td>
<td>Biometrics, bioinformatics, and computational biology</td>
</tr>
<tr>
<td>Agricultural business and management</td>
<td></td>
</tr>
<tr>
<td>Agricultural chemistry</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>Agricultural engineering—report in Engineering</td>
<td>Botany and plant biology</td>
</tr>
<tr>
<td>Agricultural production operations</td>
<td>Cell, cellular biology, and anatomical sciences</td>
</tr>
<tr>
<td>Animal sciences</td>
<td>Epidemiology, ecology and population biology</td>
</tr>
<tr>
<td>Applied horticulture and horticultural business services</td>
<td>Food, nutrition, and wellness studies</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>Genetics</td>
</tr>
<tr>
<td>Food science and technology</td>
<td>Microbiological sciences and immunology</td>
</tr>
<tr>
<td>International agriculture</td>
<td>Molecular medicine</td>
</tr>
<tr>
<td>Plant sciences</td>
<td>Neurology and neuroscience</td>
</tr>
<tr>
<td>Soil sciences</td>
<td>Pharmacology and toxicology</td>
</tr>
<tr>
<td>Veterinary biomedical and clinical sciences</td>
<td>Physiology, pathology and related sciences</td>
</tr>
<tr>
<td>Veterinary medicine</td>
<td>Zoology, animal biology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Mathematics and Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Mathematics</td>
<td>Biometrics, bioinformatics, and computational biology</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>Statistics</td>
<td>Botany and plant biology</td>
</tr>
</tbody>
</table>

### Examples of Disciplines: Mathematics and Statistics, Physical Sciences, and Psychology Fields of R&D

<table>
<thead>
<tr>
<th>E. Mathematics and Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied mathematics</td>
<td>Biometrics, bioinformatics, and computational biology</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>Statistics</td>
<td>Botany and plant biology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F. Physical Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Astronomy and Astrophysics</td>
<td>Analytical chemistry</td>
</tr>
<tr>
<td>Astronomy</td>
<td>Chemical physics</td>
</tr>
<tr>
<td>Astrophysics</td>
<td>Environmental chemistry</td>
</tr>
<tr>
<td>Planetary astronomy and science</td>
<td>Forensic chemistry</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Inorganic chemistry</td>
</tr>
<tr>
<td>(except Biochemistry—report in Biological and Biomedical Sciences)</td>
<td>Organic chemistry</td>
</tr>
<tr>
<td>Materials Science</td>
<td>Organo-metallic chemistry</td>
</tr>
<tr>
<td>Materials science</td>
<td>Physical chemistry</td>
</tr>
<tr>
<td>Materials science</td>
<td>Polymer chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G. Psychology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical psychology</td>
<td>Analytical chemistry</td>
</tr>
<tr>
<td>Counseling and applied psychology</td>
<td>Chemical physics</td>
</tr>
<tr>
<td>Human development</td>
<td>Environmental chemistry</td>
</tr>
<tr>
<td>Research and experimental psychology</td>
<td>Forensic chemistry</td>
</tr>
</tbody>
</table>

### Other Physical Sciences

- Other physical sciences that cannot be classified using the fields listed above.
### Examples of Disciplines: Social Sciences and Other Sciences Fields of R&D

#### 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 resource 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.

---

### Examples of Disciplines: Non-S&E Fields of R&D

#### 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.