

Field of Science and UofL Forms Updated

Field of Science (FOS) categories, as defined by the National Science Foundation (NSF), have been revised and reorganized. Effective July 1, 2017, new versions of the [Proposal Clearance Form \(PCF\)](#), [MIRA](#), [iRIS Proposal](#) and PeopleSoft feature the updated FOS list.

Only the latest versions of the PCF and MIRA should be used for new proposal and project submissions to the [Office of Sponsored Programs Administration](#) (OSPA), [Office of Industry Engagement](#) (OIE) or [Clinical Contracts Division](#) (CCD). Representatives from all three offices are available to assist during the transition to the new FOS listing. Previous versions of the PCF and MIRA should be discarded.

The *Field of Science Translation Table* below displays a side-by-side comparison of the previous FOS categories and the corresponding new categories. Note that certain categories did not exist previously, such as the new **D4 Natural Resources and Conservation**. Note also that several categories have been rearranged. For example, the old **E1 Computer Sciences** is now **A1 Computer and Information Sciences**.

Following the translation table is a complete listing of FOS categories and examples of disciplines within each area of interest.

About Field of Science. Research and development in science and engineering are reported annually through the Higher Education Research and Development Survey. According to NSF, this “is the primary source of information on R&D expenditures at U.S. colleges and universities. The survey collects information on R&D expenditures by field of research and source of funds and also gathers information on types of research and expenses and headcounts of R&D personnel. The survey is an annual census of institutions that expended at least \$150,000 in separately budgeted R&D in the fiscal year.” ([NSF HERD Survey information](#).)

Field of Science Translation Table

PREVIOUS FIELD		REVISED FIELD	
A1	Aeronautical & Astronautical	B1	Aerospace, Aeronautical, and Astronautical Engineering
A2	Bioengineering/Biomedical	B2	Bioengineering and Biomedical Engineering
A3	Chemical	B3	Chemical
A4	Civil	B4	Civil Engineering
A5	Electrical	B5	Electrical, Electronic and Communications Engineering
	NEW FIELD	B6	Industrial and Manufacturing Engineering
A6	Mechanical	B7	Mechanical Engineering
A7	Metallurgical & Materials	B8	Metallurgical and Materials Engineering
A8	Other Engineering	B9	Other Engineering
B1	Astronomy	F1	Astronomy and Astrophysics
B2	Chemistry	F2	Chemistry
	NEW FIELD	F3	Materials Science
B3	Physics	F4	Physics
B4	Other Physical Sciences	F5	Other Physical Sciences
C1	Atmospheric	C1	Atmospheric
C2	Earth Sciences	C2	Geological and Earth Sciences
C3	Oceanography	C3	Ocean Sciences and Marine Sciences
C4	Other Environmental Sciences	C4	Other Geosciences, Atmospheric and Ocean Sciences
D1	Mathematical Sciences	E1	Mathematics and Statistics
E1	Computer Sciences	A1	Computer and Information Sciences
F1	Agricultural	D1	Agricultural Sciences
F2	Biological	D2	Biological and Biomedical Sciences
F3	Medical	D3	Health Sciences
	NEW FIELD	D4	Natural Resources and Conservation
F4	Other Life Sciences	D5	Other Life Sciences
G1	Psychology	G1	Psychology
	NEW FIELD	H1	Anthropology
H1	Economics	H2	Economics
H2	Political Science	H3	Political Science and Government
H3	Sociology	H4	Sociology, Demography, and Population Studies
H4	Other Social Sciences	H5	Other Social Sciences
I1	Other Sciences	I1	Other Sciences
J1	Education	J3	Education
J2	Law	J5	Law
J3	Humanities	J4	Humanities
J4	Visual and Performing Arts	J7	Visual and Performing Arts
J5	Business and Management	J1	Business and Management
J6	Communication, Journalism and Library Science	J2	Communication and Communications Technologies
J7	Social Work	J6	Social Work
J8	Other Nonscience Areas	J8	Other Nonscience Areas

Field of Science Categories and Examples

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

Disciplines removed from this field:

- *Management information systems moved to **Non-S&E Fields, Business Management and Business Administration***

B. Engineering

B1. Aerospace, Aeronautical, and Astronautical Engineering

Aerodynamics
Aerospace engineering
Space technology

B2. Bioengineering and Biomedical Engineering

Biological and biosystems engineering
Biomaterials engineering
Biomedical technology
Medical engineering

B3. Chemical Engineering

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

Disciplines removed from this field:

- *Petroleum engineering moved to **Other Engineering***
- *Wood science moved to **Life Sciences, Agricultural Sciences***

B4. 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

Disciplines removed from this field:

- *Architecture moved to **Non-S&E Fields, Other Non-S&E Fields***

B5. 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

B6. Industrial and Manufacturing Engineering (*NEW FIELD*)

Industrial engineering

Manufacturing engineering

Operations research

Systems engineering

*Disciplines **added** to this field:*

- *Industrial, manufacturing and systems engineering moved from **Other Engineering***
- *Operations research moved from **Mathematics and Statistics***

B7. Mechanical Engineering

Electromechanical engineering

Mechatronics, robotics, and automation engineering

*Disciplines **removed** from this field:*

- *Engineering mechanics moved to **Other Engineering***

B8. Metallurgical and Materials Engineering

Ceramic sciences and engineering

Geophysical, geological engineering

Materials engineering

Metallurgical engineering

Mining and mineral engineering

Textile sciences and engineering

Welding

*Disciplines **removed** from this field:*

- *Materials science moved to the new field of **Materials Science** under **Physical Sciences***

B9. 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

*Disciplines **removed** from this field:*

- *Industrial, manufacturing and systems engineering moved to **Industrial and Manufacturing Engineering***

*Disciplines **added** to this field:*

- *Engineering mechanics, physics, and science moved from **Mechanical Engineering***
- *Petroleum engineering moved from **Chemical Engineering***

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

C1. Atmospheric Science and Meteorology

Aeronomy

Atmospheric chemistry and climatology

Atmospheric physics and dynamics

Extraterrestrial atmospheres

Meteorology

Solar

Weather modification

C2. 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

Disciplines removed from this field:

- *Cartography moved to **Social Sciences, Other Social Sciences***

C3. Ocean Sciences and Marine Sciences

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

C4. Other Geosciences, Atmospheric Sciences, and Ocean Sciences

Other fields that cannot be classified using the fields listed above

D. Life Sciences

D1. Agricultural Sciences

Agricultural business and management
Agricultural chemistry
Agricultural economics
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
Wood science

Disciplines removed from this field:

- *Conservation moved to **Natural Resources and Conservation***
- *Renewable natural resources moved to **Natural Resources and Conservation***
- *Landscape architecture moved to **Non-S&E Fields, Other Non-S&E Fields***
- *All veterinary disciplines moved to **Health Sciences***

Disciplines added to this field:

- *Agricultural economics moved from **Social Sciences, Economics***
- *Wood science moved from **Engineering, Chemical Engineering***

D2. Biological and Biomedical Sciences (*previously Biological 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
Genetics
Microbiological sciences and immunology
Molecular medicine
Neurobiology and neuroscience
Pharmacology and toxicology
Physiology, pathology and related sciences
Zoology, animal biology

Disciplines removed from this field:

- *Foods and nutrition studies moved to **Non-S&E Fields, Other Non-S&E Fields***
- *Nutritional sciences (renamed Dietetics and clinical nutrition services) moved to **Health Sciences***
- *Physical anthropology moved to **Social Sciences, Anthropology***
- *All veterinary disciplines moved to **Health Sciences***

Disciplines added to this fields:

- *Neurobiology and neuroscience moved from **Health Sciences***

D3. Health Sciences (*previously Medical 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
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
Veterinary biomedical and clinical sciences
Veterinary medicine
Zoology

Several medical fields that had been previously listed as individual examples here have been clustered under the name Clinical medicine research.

Disciplines removed from this field:

- *Neurosciences moved to **Biological and Biomedical Sciences***
- *Pharmacology moved to **Biological and Biomedical Sciences***

Disciplines added to this field:

- *Clinical/medical laboratory technologies moved from **Other Life Sciences***
- *Communication disorders sciences and services moved from **Other Life Sciences***
- *Gerontology, health sciences moved from **Other Life Sciences***
- *Health and medical administration services moved from **Other Life Sciences***
- *Nursing moved from **Other Life Sciences***

- *Registered nursing, nursing administration, nursing research and clinical nursing moved from **Other Life Sciences***
- *All therapy and rehabilitation fields moved from **Other Life Sciences***
- *Nutritional sciences (renamed Dietetics and clinical nutrition services) moved from **Biological and Biomedical Sciences***
- *All Veterinary disciplines are now included in this field. Subdisciplines may have moved from **Agricultural Sciences** or **Biological and Biomedical Sciences**.*

D4. Natural Resources and Conservation (*NEW FIELD*)

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

*Disciplines **added** to this field:*

- *Most disciplines in this field moved from **Agricultural Sciences***
- *Natural resources economics moved from **Social Sciences, Economics***

D5. Other Life Sciences

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

*Disciplines **removed** from this field:*

- *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 administration services moved to **Health Sciences***
- *Nursing moved to **Health Sciences***
- *Registered nursing, nursing administration, nursing research and clinical nursing moved to **Health Sciences***
- *All therapy and rehabilitation fields moved to **Health Sciences***

E. Mathematics and Statistics

Applied mathematics
 Mathematics
 Statistics

*Disciplines **removed** from this field:*

- *Operations research moved to **Engineering, Industrial and Manufacturing Engineering***

F. Physical Sciences

F1. Astronomy and Astrophysics

Astronomy
 Astrophysics
 Planetary astronomy and science

F2. 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

*Disciplines **removed** from this field:*

- *Pharmaceutical chemistry moved to **Life Sciences, Health Sciences***

*Disciplines **added** to this field:*

- *Chemical physics moved from **Physics***

F3. Materials Science (*NEW FIELD*)

Materials chemistry

Materials science

*Disciplines **added** to this field:*

- *Materials science moved from **Engineering, Metallurgical and Materials Engineering***

F4. 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

*Disciplines **removed** from this field:*

- *Chemical physics moved to **Chemistry***

F5. 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

*Disciplines **removed** from this field:*

- *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***

H. Social Sciences

H1. Anthropology (*NEW FIELD*)

Cultural anthropology

Medical anthropology

Physical and biological anthropology

*Disciplines **added** to this field:*

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

H2. Economics

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

*Disciplines **removed** from the field:*

- *Agricultural economics moved to **Life Sciences, Agricultural Sciences***
- *Resource economics moved to **Life Sciences, Natural Resources and Conservation***

H3. Political Science and Government

Comparative government
Government
Legal systems
Political economy
Political science
Political theory

Disciplines removed from this field:

- *International relations and affairs moved to **Other Social Sciences***
- *Public policy analysis moved to **Other Social Sciences***
- *Public administration moved to **Non-S&E Fields, Other Non-S&E fields***
- *Regional studies moved to **Other Social Sciences***

H4. 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

Disciplines removed from the field:

- *All subdisciplines of anthropology moved to **Anthropology***

H5. Other Social Sciences

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

Disciplines added to this field:

- *Cartography moved from **Geosciences, Atmospheric, and Ocean Sciences, Geological and Earth Science***
- *International relations and affairs moved from **Political Science and Government***
- *Public policy analysis moved from **Political Science and Government***
- *Regional studies moved from **Political Science and Government***

Disciplines removed from this field:

- *History of science moved to **Non-S&E Fields, Humanities***

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

J1. Business Management and Business Administration (*previously Business and Management*)

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

Marketing management and research

*Disciplines **added** to this field:*

- *Management information systems moved from **Computer and Information Sciences***

J2. Communication and Communications Technologies (*previously Communication, Journalism, and Library Science*)

Communication and media studies

Communications technologies

Journalism

Radio, television, and digital communication

*Disciplines **removed** from this field:*

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

J3. Education

Education administration and supervision

Education research

Teacher education, specific levels and methods

Teaching fields

J4. Humanities

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

*Disciplines **added** to this field:*

- *History of science moved from **Social Science, Other Social Sciences***

J5. Law

Law

Legal studies

J6. Social Work

(no specific examples)

J7. Visual and Performing Arts

Drama, theatre arts and stagecraft

Film, video, and photographic arts

Fine and studio arts

Music

J8. Other Non-S&E Fields

Architecture

City, urban, community and regional planning

Family, consumer sciences and human sciences

Foods, nutrition, and wellness studies

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.

*Disciplines **added** to this field:*

- *Architecture moved from **Engineering, Civil Engineering***
- *Food and nutrition studies moved from **Life Sciences, Biological and Biomedical Sciences***
- *Landscape architecture moved from **Life Sciences, Agricultural Sciences***
- *Library science moved from **Communication and Communication Technologies***
- *Public administration moved from **Social Sciences, Political Science and Government***