



International Labour Organization  
Organisation internationale du Travail  
Organización Internacional del Trabajo

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*Updating the  
International Standard Classification of Occupations (ISCO)*

*Draft ISCO-08 Group Definitions:  
Occupations in Life Science*

*Geneva, December 2007*

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POLICY INTEGRATION DEPARTMENT  
BUREAU OF STATISTICS

19/03/2008

## **ISCO-08 Draft Definitions – Life Science**

**ISCO 08 Code**

**213**

**Title EN**

**Life science professionals**

### **Lead Statement**

Life science professionals apply knowledge gained from research into human, animal and plant life and their interactions with each other and the environment to develop new knowledge, improve agricultural and forestry production, and solve human health and environmental problems.

### **Task statement**

Tasks performed usually include: collecting, analysing and evaluating experimental and field data to identify and develop new processes and techniques; providing advice and support to governments, organizations and businesses about ecological sustainable development of natural resources.

### **Included occupations**

- 2131 Biologists, botanists, zoologists and related professionals
- 2132 Farming, forestry and fisheries advisers
- 2133 Environmental protection professionals

### **Excluded occupations**

### **Notes**

**ISCO 08 Code****314****Title EN****Life science technicians and related associate professionals****Lead Statement**

Life science technicians and related associate professionals perform a variety of technical tasks to support life science professionals with their research, development, management, conservation and protection work, in areas such as biology, botany, zoology, biotechnology and biochemistry, and to agriculture, fisheries and forestry.

**Task statement**

Tasks performed usually include: conducting tests, experiments, laboratory analyses, field research and surveys to collect information using accepted scientific methods; keeping records; assisting in analysing data and preparing reports; operating and maintaining equipment.

**Included occupations**

Occupations in this minor group are classified into the following unit groups:

- 3141 Life science technicians (except medical)
- 3142 Agricultural and fisheries technicians
- 3143 Forestry technicians

**Excluded occupations****Notes**

**ISCO 08 Code****2133****Title EN****Environmental protection professionals****Lead Statement**

Environmental protection professionals study and assess the effects on the environment of human activity such as air, water and noise pollution, soil contamination, climate change, toxic waste and depletion and degradation of natural resources. They develop plans and solutions to protect, conserve, restore, minimize and prevent further damage to the environment.

**Task statement**

Tasks include:

- a) conducting research, performing tests, collecting samples, performing field and laboratory analysis to identify sources of environmental problems and recommending ways to prevent, control and remediate the impact of environmental problems;
- b) assessing the likely impact that potential or proposed activities, projects and developments may have on the environment, and recommending whether such developments should proceed;
- c) developing and coordinating the implementation of environmental management systems to enable organizations to identify, monitor and control the impact of their activities, products and services on the environment;
- d) conducting audits to evaluate environmental impact of existing activities, processes, wastes, noises and substances;
- e) assessing an organization's compliance with government and internal environmental regulations and guidelines, identifying violations and determining appropriate remedial action;
- f) providing technical advice and support services to organizations on how best to deal with environmental problems in order to reduce environmental damage and minimize financial loss;
- g) developing conservation plans.

**Included occupations**

Examples of the occupations classified here:

- Air Pollution Analyst
- Conservation Officer
- Conservation Scientist
- Ecologist
- Environmental Adviser
- Environmental Auditor
- Environmental Consultant
- Environmental Research Scientist
- Environmental Scientist
- Park Ranger
- Water Quality Analyst

**Excluded occupations**

Related occupations classified elsewhere:

- Environmental Engineer - 2149
- Environmental Health Officer - 3257

**Notes**

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**ISCO 08 Code****2131****Title EN****Biologists, botanists, zoologists and related professionals****Lead Statement**

Biologists, botanists, zoologists and related professionals study living organisms and their interactions with each other and with the environment, and apply this knowledge to solve human health and environmental problems. They work in diverse fields such as botany, zoology, ecology, marine biology, genetics, immunology, pharmacology, toxicology, physiology, bacteriology and virology.

**Task statement**

Tasks include:

- a) undertaking research in laboratories and in the field to increase scientific knowledge of living organisms; to discover new information; to test hypotheses; to solve problems in areas such as the environment, agriculture and health; and to develop new products, processes and techniques for pharmaceutical, agricultural and environmental use;
- b) designing and conducting experiments and tests;
- c) gathering human, animal, insect and plant specimens and data, and studying their origin, development, chemical and physical form, structure, composition, and life and reproductive processes;
- d) examining living organisms using a variety of specialised equipment, instruments, technologies and techniques such as electron microscopes, telemetry, global positioning systems, biotechnology, satellite imaging, genetic engineering, digital imaging analysis, polymerase chain reaction and computer modelling;
- e) identifying, classifying, recording and monitoring living organisms and maintaining databases;
- f) writing scientific papers and reports detailing research and any new findings which are then made available to the scientific community in scientific journals or at conferences for scrutiny and further debate;
- g) designing and carrying out environmental impact assessments to identify changes caused by natural or human factors;
- h) providing advice to governments, organizations and businesses in areas such as conservation, management of natural resources, the effects of climate change and pollution.

**Included occupations**

Examples of the occupations classified here:

- Animal Behaviourist
- Bacteriologist
- Biologist
- Biotechnologist
- Botanist
- Cell Geneticist
- Marine Biologist
- Microbiologist
- Molecular Biologist
- Molecular Geneticist
- Zoologist

**Excluded occupations**

Related occupations classified elsewhere:

- Ecologist - 2133

**Notes**

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**ISCO 08 Code****3141****Title EN****Life science technicians (except medical)****Lead Statement**

Life science technicians (except medical) provide technical support to life science professionals undertaking research, analysis and testing of living organisms, and development and application of products and processes resulting from research in areas such as agriculture, natural resource management, environmental protection, plant and animal biology, microbiology, and cell and molecular biology.

**Task statement**

Tasks include:

- (a) assisting in designing, setting up and conducting experiments;
- (b) setting up, calibrating, operating and maintaining laboratory instruments and equipment;
- (c) collecting and preparing specimens and samples, chemical solutions and slides and growing cultures for use in experiments;
- (d) performing routine field and laboratory tests;
- (e) monitoring experiments to ensure adherence to correct laboratory quality control procedures and health and safety guidelines;
- (f) making observations of tests, and analysing, calculating, recording and reporting test results using appropriate scientific methods;
- (g) preserving, classifying and cataloguing specimens and samples;
- (h) keeping detailed logs of work performed;
- (i) using computers to develop models and analyse data;
- (j) using complex and high-powered equipment to perform work;
- (k) participating in the research, development and manufacture of products and processes;
- (l) ordering and stocking laboratory supplies;
- (m) maintaining relevant databases.

**Included occupations**

Examples of the occupations classified here:

- Bacteriology Technician
- Biochemistry Technician
- Herbarium Technician
- Pharmacology Technician
- Serology Technician
- Tissue Culture Technician
- Zoology Technician

**Excluded occupations**

- Medical laboratory technician - 3212
- Pathology laboratory technician - 3212
- Pharmaceutical technician - 3213

**Notes**