

Minors

College of Science

INFORMATION

Minors are available in all departments of the College of Science with the exception of Health Sciences. Students should consider a minor as a means to complement their major program and/or to develop expertise in an additional area. Minors are available to science majors and non-science majors alike. For more information or for advising assistance, contact the department which offers the minor.

As with declaration of a major, it is important that students who intend to pursue a minor to officially declare the minor. Documenting the pursuit of a minor allows the minor program to appear on official university records.

PROGRAMS

MINOR IN BIOLOGY: is a useful add-on for students majoring in Pre-Professional Chemistry or Health Sciences, or students in any major who will apply to medical, dental, or veterinary school. The minor provides a broad foundation in biology with the option to explore self-selected areas in depth.

MINOR IN CHEMISTRY: is intended to be an enhancement opportunity for students in the sciences, engineering and humanities. A chemistry minor will enable a student to seek opportunities in careers related to chemical technology as well as in other fields that require some knowledge of chemistry, such as technical writers/translators biotechnologists, and environmental/material engineers. All chemistry minors must be approved by the departmental advisor.

MINOR IN ENVIRONMENTAL SCIENCES: provides students with an in-depth exploration of the

physical and biological aspects of ecosystems, and the scientific underpinnings of environmental challenges facing modern society. The minor also provides students with the opportunity to explore the links among environmental science, law, regulation, and policy, and to acquire specific skills that would be valuable for pursuing an advanced degree or for entering an environmentally-related career.

MINOR IN GEOLOGICAL SCIENCES: is intended as an opportunity for students to incorporate course work dealing with the earth sciences into their university careers. The courses making up the geology minor must represent a cohesive and consistent sequence. While the exact sequence of courses will depend on the needs of the individual student, it must be approved in advance by the Geological Sciences Advisor, who approves all Geology minors.

MINOR IN MATHEMATICS: will improve a student's analytical abilities and enhance a student's ability to adapt to technological changes, as well as adds to their resume. This minor is especially useful for students majoring in engineering, computer science, physics, chemistry and economics.

MINOR IN PHYSICS: will enhance a student's scientific understanding, helping them to solve new problems on the job and adapt better to changes in their technical career. It will improve a student's resume, distinguishing you from the others who simply took the minimum requirements for their major.

MINOR IN PSYCHOLOGY: is designed for majors in other fields who are interested in exploring the

behavioral and biological aspects of human behavior. The minor provides valuable tools that enhance career options in a wide range of areas including business, management and information systems. Students majoring in a variety of areas, such as biology, education, sociology, law, anthropology, social work, business and medicine, may find a psychology minor to be particularly beneficial. Earning a psychology minor confers a certain degree of status to the Bachelors degree.

MINOR IN SPEECH AND HEARING: is especially valuable for students majoring in education, special education, or the health-care professions. The minor provides the student with a foundation regarding the developmental and normative aspects of speech, language and hearing. The requirements for the minor are detailed on the Speech and Hearing program sheet.

MINOR IN STATISTICS: is intended for students interested in a career or graduate school that requires a research component involving data analysis. The study of mathematics, psychology, sociology, biology, environmental science, health science, social science, among others, can be greatly enhanced by a minor in statistics.

For more information, contact:

College of Science
Cleveland State University
2121 Euclid Avenue SR 353
Cleveland, OH 44115-2214
Phone: (216) 687-5580
E-mail: cos@csuohio.edu
http://www.csuohio.edu/sciences/department_list.html

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Biology Minor (16 credit hours):

BIO 200/201 Introductory Biology I and Lab (4)
BIO 202/203 Introductory Biology II and Lab (4)

AND 8 credit hours of 200, 300, or 400 level BIO courses (excluding BIO 400)

Chemistry Minor (24 credit hours):

CHM 261/266 General Chemistry I and Lab (5)
CHM 262/267 (or 262H/267H or 278) General Chemistry II and Lab (5)

AND 14 credit hours of 300 or 400 level CHM courses

Environmental Science Minor (19-20 credit hours):

BIO 202/203 Introductory Biology II and Lab (4)
EVS 206 Introduction to Environmental Science (4)
EVS 300/301 Physical Features of Ecosystems and Lab (4)
EVS 302/303 Biological Features of Ecosystems and Lab (4)

AND ONE of the following courses:
CHM 255 Principles of Environmental Chemistry (3)
CVE 471 Environmental Law, Regulation and Compliance (3)
GEO 323 Geospatial Concepts and Tools (3)
OR any course approved by the Environmental Science Advisor

Geological Sciences Minor* (17 credit hours):

GEO 100/101 Introductory Geology and Lab (4)

AND 13 credit hours of 200, 300, or 400 level GEO courses (at least 9 credits must be 300 or 400 level)

Mathematics Minor (24 credit hours):

MTH 181 Calculus I (4)
MTH 182 Calculus II (4)

AND 8 credit hours of 300 or 400 level MTH courses (excluding MTH 326, MTH 327, MTH 328, MTH 329 & MTH 330)

AND 8 credit hours of the following courses:
MTH 220 Discrete Mathematics (4)
MTH 281 Multivariable Calculus (4) **OR** MTH 283 (2)
MTH 286 Introduction to Differential Equations (4)
MTH 288 Linear Algebra (4) **OR** MTH 284 (2)

Physics Minor (18 credit hours):

PHY 243 (or 241 or 243H) University Physics I (5)
PHY 244 (or 242 or 244H) University Physics II (5)

AND 8 credit hours of 300 or 400 level PHY courses

Psychology Minor* (19 credit hours):

PSY 101 Introduction to Psychology (4)

AND 7 credit hours of PSY courses (at least one 300 or 400 level)

AND TWO courses, one each from any two of the three Core areas (A, B, or C) (8 credits):

Core A	Core B	Core C
PSY 339 Social Psychology (4)	PSY 368 Perceptual Processes (4)	PSY 385 Psychology of Motivation (4)
PSY 342 Psychology of Personality (4)	PSY 370 Psychology of Learning (4)	PSY 481 Psychopharmacology (4)
PSY 344 Intellect/Personality Test (4)	PSY 372 Memory and Cognition (4)	PSY 482 Biological Basis of Behavior (4)
PSY 345 Abnormal Psychology (4)	PSY 451 Human Performance (4)	PSY 487 Brain and Cognition (4)
	PSY 479 History of Psychology (4)	

Statistics Minor (19 credit hours):

MTH 347 Applied Statistics (4)
MTH 421 Time Series Analysis (4)
MTH 431 Categorical Data Analysis (4)
MTH 435 Consulting and Programming (4)

AND ONE of the following courses:
MTH 147 Statistical Concepts with Apps (4)
MTH 323 Statistical Methods (4)
ECN 322 Statistics and Econometrics (4)
COM 303 Communication Inquiry (4)
PSY 311 Behavioral Science Statistics (4)

SOC 354 Quant Sociological Research (4)
SWK 305 Social Work Research II (3)
UST 404 Urban Data Analysis (4)
OMS 201 Business Statistics (3)
PSC 251 Introduction to Data Analysis (3)

*Grades of C or above must be earned in order for courses to count toward these minors.

June 2009