



University Bulletin

Undergraduate Degree Programs

Earth and Mineral Sciences (EM SC)

EM SC 440 Science Diving (3) Advanced scuba diving skills applied to underwater research.

EM SC 440 Science Diving (3)

EM SC 440 is a three credit intermediate science diving course for students already holding a basic and second level open water scuba diving certification from an internationally recognized certification agency (e.g. PADI, NAUI, CMAS, YMCA, SSI etc.). Students must have a minimum of 20 logged dives beyond their basic open water certification dives by the start of the course. Scientific diving is concerned with the observation of underwater phenomena and the acquisition of scientific data. This course introduces students to some of the basic skills and techniques used in scientific diving, following the standards established by the American Academy Underwater Sciences (AAUS) -- with a significant emphasis on diver safety. The course covers theoretical aspects of the physics of diving, dive physiology, and underwater environments. There is a strong emphasis on diver safety with theoretical and practical training in cardiopulmonary resuscitation, diving-related first aid, accident management and dive rescue. The course will cover advanced recreational diving techniques, including deep diving and enriched air (nitrox) diving. The course will also introduce students to a variety of scientific diving skills including underwater navigation, mapping, data collection and analysis, and underwater photography. The course will include classroom sessions, pool sessions, and open water dives. Both the classroom- sessions and the open water dives will be split between skills development and their application in research settings. The research will involve a variety of projects (e.g. fish surveys, lake sediment sampling for climate reconstruction, underwater mapping) - the exact nature of which will vary depending on the areas of expertise of the faculty involved. Each government or university underwater research program certifies its own divers based on standards that, at a minimum, conform to those of the AAUS. Successful completion of the course will allow you to apply for science diver certification from the Penn State Science Diving Program. Certification is also dependent on a medical examination at the discretion of the University Dive Safety Officer; it is not automatically offered on completion of the course. The course is usually offered once a year in the summer or fall semesters and will involve several day trips (usually at weekends) to various river, lake, and quarry locations within the state. There will be an additional fee charged to cover the costs of the open water dives and administrative charges for recreational dive certifications.

General Education: None

Diversity: None

Bachelor of Arts: None

Effective: Summer 2003

Prerequisite: http://bulletins/bluebook/university_course_descriptions.cfm?letter=E&courselong=||latest) basic and second level open water scuba certification from http://bulletins/bluebook/university_course_descriptions.cfm?letter=E&courselong=||latest) an internationally recognized certification agency and a http://bulletins/bluebook/university_course_descriptions.cfm?letter=E&courselong=||latest) minimum of 20 additional logged dives beyond the basic http://bulletins/bluebook/university_course_descriptions.cfm?letter=E&courselong=||latest) certification dives.

Note : Class size, frequency of offering, and evaluation methods will vary by location and instructor. For these details check the specific course syllabus.

accurately indicated in each student's degree audit.

The University reserves the right to change the requirements and regulations listed here and to determine whether a student has satisfactorily met its requirements for admission or graduation, and to reject any applicant for any reason the University determines to be material to the applicant's qualifications to pursue higher education. Nothing in this material should be considered a guarantee that completion of a program and graduation from the University will result in employment.

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