

Minor in Explosive Engineering

Program Description

There are very few academic explosive engineering programs worldwide. Colorado School of Mines is one of a few educational institutions that offers an explosive engineering minor program in the U.S.A. Developed in the Mines tradition of combining academic education with hands-on experience, this minor program will prepare students for new and developing applications involving the use of explosives in the mining and materials engineering, underground construction, oil and gas operations, demolition, homeland security, military, forensic investigations, manufacturing and material synthesis.

With the proper program development of courses and basic knowledge in explosive engineering, students enrolled in this program will discover and gain insight into the exciting industrial applications of explosives, selection of explosives, and the correct and safe use of the energetic materials. With the help of the program advisor, the students will design and select the proper course sequence and complete hands-on research project under the supervision of a faculty advisor.

Explosive Engineering Minor

Program Advisor: Lee Fronapfel

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A total of 18 credits are needed to complete the Explosive Engineering Minor Program. This is the preferred route for students that would like to specialize in explosive engineering. The first three (required) courses will provide the students with basic knowledge in explosive engineering. The subsequent courses will give students a view into the mining and geotechnical applications of explosive engineering, such as with surface mining, underground mining, or underground construction.

REQUIRED FOR ALL STUDENTS: 9.0

MNGN333 EXPLOSIVES ENGINEERING I (REQUIRED FOR ALL STUDENTS:)

MNGN407 ROCK FRAGMENTATION (REQUIRED FOR ALL STUDENTS:)

MNGN444 EXPLOSIVES ENGINEERING II (REQUIRED FOR ALL STUDENTS:)

AT LEAST THREE COURSES FROM THE FOLLOWING: 9.0

MNGN210	INTRODUCTORY MINING
MNGN308	MINE SAFETY
MNGN309	MINE SAFETY AND OPERATIONS
MNGN312	SURFACE MINE DESIGN
MNGN314	UNDERGROUND MINE DESIGN
MNGN316	COAL MINING METHODS
MNGN321	INTRODUCTION TO ROCK MECHANICS
MNGN404	TUNNELING
MNGN405	ROCK MECHANICS IN MINING
MNGN406	DESIGN AND SUPPORT OF UNDERGROUND EXCAVATIONS
MNGN408	UNDERGROUND DESIGN AND CONSTRUCTION
MNGN499	INDEPENDENT STUDY

Total Semester Hrs

18.0