

Graduate Diploma in Explosives Engineering (61112345)

Graduate certificate programs in explosives engineering provide students with a practical and theoretical understanding of explosives and blasting technology. Students learn to design explosives and explosives systems that can break away both natural and man-made structures. They learn to plan, build and executive explosive systems for uses in demolition, construction and even research.

Graduate certificate programs in explosives engineering are open to students who already hold a bachelor's or master's degree, or even a Doctor of Philosophy (Ph.D.), in engineering or a related field. Some schools only admit students who also have some professional work experience in engineering, construction or demolition.

Courses included in a graduate certificate program in explosives engineering cover principles of the science, as well as practical and technical skills related to the profession. Some examples of courses include:

- Expl601 Principles of explosives engineering
- Expl602 Demolitions technology
- Expl603 Blasting design
- Expl804 Instrumentation for explosives testing
- Expl605 High explosives theory

Master of Science in Explosives Engineering

(61112346)

Master's degree programs in explosives engineering typically are offered within the mining, construction or engineering departments of 4-year universities. They allow students to gain a thorough understanding of the theoretical and practical components of explosives engineering. Students learn to safely handle explosives, design explosive systems to meet particular demolition parameters and operate instruments and materials used in the field. They may also be required to complete a thesis paper or project in explosives engineering before graduation.

Master's degree programs in explosives engineering include background courses related to advanced engineering and mathematics. Core courses often include the following:

- Expl606 Controls for blasting
- Expl607 Pyrotechnics operations
- Expl608 Buildings and structure demolition
- Expl609 Underground construction technology
- Expl610-Demolition Practice

Popular Career Options

Explosives engineers can use their specialized skills in a variety of industries. They might hold specific titles like:

- Construction explosives engineer
- Special effects and pyrotechnics engineer
- Demolition explosives engineer
- Research and exploration blaster