

**Department: Chemical and Natural Gas Engineering**  
**Program: MSc Chemical Engineering**

Skill Set	Professional Application	Delivery of Skill Set Courses, extracurricular activities, etc. in which the skill set is introduced (I), reinforced (R), or mastered (M)
Core Skill: Verbal, written, and presentation Communications	All jobs require being Proficient in oral, written, and presentation communication skills. Graduate students are expected to write research papers and present them in professional societies' conferences.	Communication skills are developed in various courses through oral and written communications. Many courses have research components in them which requires oral and written reports.
Core Skill: Team Player	In today's world no body works alone. In any project engineers have to work with others to achieve their outcomes. Most projects are multidisciplinary, which requires engineers from different disciplines work closely together.	In many courses assignments are given that require teamwork. This is especially true when a large class project is assigned that several graduate students have to work together in order to finish it.
Discipline-based Skill: Computer and Digital Technology	Most processes in nearly all industries, such as refineries, chemical plants, and gas plants are fully automated using computers and simulators. Chemical engineers have to be able to work with these technologies every day.	Computer based assignments are given in many courses. Advanced process technology simulators such as ASPEN and HYSYS are taught and are used in assignments and projects.
Discipline-based Skill: Processing and design	Processing and design is the responsibility of chemical engineers, in industries such as refineries, chemical plants, and gas processing plants.	Graduate courses require in depth understanding of many processes and design of the elements. Many graduate courses include research components, which requires researching advantages and disadvantages of some processes.
Discipline-based Skill: Creativity and skillful in research	Companies that hire graduate students with MSc degrees, expect higher creativity and research capabilities. As technologies are changing rapidly, for companies to stay competitive, they have to research the new technologies, which requires special skills of research methodologies	Graduate students have research components in most of their graduate course works. They take thesis or project for their main research, where they spend at least one semester for project and two semesters for thesis.