COLLEGE OF SCIENCE AND TECHNOLOGY

Dr. James Pierce, Dean

Science Building, Room 119

Box T-0885

(254) 968-9781

http://www.tarleton.edu/cost

The College of Science and Technology has three primary missions: first, to provide the courses in mathematics and natural and physical sciences that form an essential part of the general education requirement required of all University students; second, to provide supporting courses for students in other academic areas, such as education, business, and agriculture; and third, to provide the opportunity for students to concentrate their study in a major field of science, technology, or engineering. The College is strongly committed to excellence in teaching, research, and service to the University and to society.

Degree programs available in the College of Science and Technology feature considerable variety at both the undergraduate and graduate levels. The range of programs includes those areas that provide the foundation required for professional fields such as medicine, dentistry, optometry, and pharmacy as well as specialized programs that are professionally oriented and lead to specific careers such as clinical laboratory science and nursing. It also includes mathematics, various sciences, engineering, computer science, and technology. The college offers masters degrees in four areas: biology, environmental science, engineering technology, and mathematics. The College of Science and Technology is organized into seven departments:

BIOLOGICAL SCIENCES

Dr. John S. Calahan, Jr., Head

Science Building, Room 203

Box T-0100

(254) 968-9159

http://www.tarleton.edu/biology

The Department of Biological Sciences offers two distinct four-year curricula that lead to the baccalaureate degree. These are the Bachelor of Science in Biology and the Bachelor of Science in Biomedical Science. In addition, Pre-Health professional programs are offered which include Pre-Medicine, Pre-Dentistry, Pre-Physical Therapy, Pre-Pharmacy, and Pre-Veterinary Medicine. Secondary teaching certificates may be obtained with Science Certification or Life Science Certification. The curricula are designed to maximize career opportunities and to prepare students for various graduate and professional school programs.

A Master of Science degree is also offered. For further information, see the graduate section of this catalog.

THE BACHELOR OF SCIENCE DEGREE IN BIOLOGY

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
BIOL 120, BIOL 121, BIOL 303, BIOL 307, BIOL 353	19
CHEM 105[1], CHEM 108[1], CHEM 201, PHYS 104, PHYS 105	20
MATH 109[1], ENGL 309	6
General Without Certification	
Advanced BIOL Electives	24
MATH 350	4
Electives, 3 hours advanced	15
Freshwater Ecology	
BIOL 349, BIOL 401, BIOL 441, BIOL 462	16
Advanced BIOL Electives	8
MATH 350	4
GEOL 105, ES 350, HYDR 110	9
Electives	6
General Aquatic Marine	
BIOL 340, BIOL 349, BIOL 401, BIOL 442, BIOL 462	18
Advanced BIOL Electives	6
MATH 350	4

GEOL 105, ES 340	6
Electives	9
Environmental Biology	
BIOL 315, BIOL 336, BIOL 349, BIOL 401, BIOL 441, BIOL 340 or BIOL 442	23
MATH 350	4
GEOL 105, ES 350	6
Electives, 3 hours advanced	10
Molecular Biology	
BIOL 313, BIOL 385, BIOL 395, BIOL 474, BIOL 475, BIOL 478	21
CHEM 202	4
MATH 350	4
Advanced BIOL Electives	3
Electives, 3 hours advanced	11
Wildlife Biology	
BIOL 315, BIOL 401, BIOL 451, BIOL 430, BIOL 462	20
Advanced BIOL Electives	4
MATH 350	4
RNRM 221 or WLDM 221	3
RNRM or WLDM Elective	3
Electives	9
Life Science Teacher Certification[1]	
BIOL 315, BIOL 349, BIOL 401, BIOL 470	15
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	18
PSY 220 or PSY 303 or FCS 300, RDG 351	6
Advanced BIOL Electives	4
Science Teacher Certification[1]	
BIOL 315, BIOL 349, BIOL 401, BIOL 470	15
CHEM 486, GEOL 105, GEOL 106, ES 210	11
Advanced ES Electives	6
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	18
PSY 220 or PSY 303 or FCS 300, RDG 351	6

[1]A student who fails to complete certification requirements must complete the requirements of one of the non-certification support areas to graduate with a bachelor's degree in biology.

[1] Course may be counted toward general education requirement.

[2] A student who fails to complete certification requirements must complete the requirements of one of the non-certification support areas to graduate with a bachelor's degree in biology.

THE BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL SCIENCE

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
BIOL 120, BIOL 121, BIOL 303, BIOL 306, BIOL 307, BIOL 353, BIOL 460, BIOL 474, BIOL 485	31
CHEM 105[1], CHEM 108[1], CHEM 201	12
PHYS 104 or PHYS 122, PHYS 105 or PHYS 242	8
MATH 109 or MATH 120[1], MATH 350	7-8
ENGL 309	3
General Without Certification	
Advanced BIOL Electives from, BIOL 302, BIOL 313, BIOL 385, BIOL 395, BIOL 445, BIOL 461, BIOL 475, BIOL 478	10
Electives, 5 hours advanced	17
Pre-Medical/Pre-Dental	
BIOL 385, BIOL 461	8
Advanced BIOL Elective from, BIOL 302, BIOL 313, BIOL 395, BIOL 445, BIOL 475, BIOL 478	3
CHEM 202	4
Electives, 4 hours advanced	12
Pre-Physical Therapy	

Advanced BIOL Electives from, BIOL 302, BIOL 313, BIOL 385, BIOL 395, BIOL 445, BIOL 461, BIOL 475, BIOL 478	10
PSY 101[1], PSY 307, SOC 201, MGMT 301	12
Electives	8
Pre-Veterinary	
BIOL 461, BIOL 475	7
Advanced BIOL electives from, BIOL 302, BIOL 313, BIOL 385, BIOL 395, BIOL 445, BIOL 478	3
CHEM 202	4
ANSC 107, ANSC 309 or ANSC 406	6-7
Electives, 4 hours advanced	7

[1]Satisfies university general education requirement.

Important Information Regarding Health Professions Programs

The Pre-Medical/Pre-Dental, Pre-Physical Therapy, and Pre-Veterinary Support Areas in Biomedical Science are designed to meet or exceed the entrance requirements for medical, dental, physical therapy, and veterinary programs in Texas. Other health profession programs including, but not limited to Physician Assistant, Pharmacy, Optometry, Chiropractic, Podiatry, Radiology Technician, and Dental Hygiene can vary considerably in terms of entrance requirements. Students interested in such programs are encouraged to earn a BS in Biomedical Science by following the General Biomedical Science Support Area. By allowing greater flexibility in elective courses, the General Biomedical Science Support Area can be easily adjusted to meet the entrance requirements of these health profession programs.

A program in Pre-Veterinary Medicine is also offered through the Department of Animal Science and Wildlife Management. Although the Pre-Veterinary programs offered through the Departments of Animal Science and Wildlife Management, and Biological Sciences each meet all the requirements for admission to the Texas A&M College of Veterinary Medicine, a student is typically best suited for one program or the other. It is important that a student discuss with an advisor which program is best suited to his or her interests, skills, and goals.

It is important to know that health profession programs may change entrance requirements without notice. Therefore, it is the responsibility of the student to check these requirements and work closely with an advisor to ensure that all requirements are met. If all of the entrance requirements for a professional program have been met, it is sometimes possible for a student to matriculate to the professional program prior to completing a degree at Tarleton. In this case, a student might meet the requirements of a Bachelor of Science degree at Tarleton by (1) fulfilling the “Degree Requirements” as stated in the Academic Information section of the catalog and (2) transferring the necessary hours from an approved professional school to Tarleton for a minimum total of 120 hours.

SUGGESTED CURRICULUM FOR PRE-PHARMACY[1]

	12
ENGL 111, 112, 6 hours sophomore literature	23
BIOL 120,121, 219, 303, 307, 474	16
CHEM 105, 108, 201, 202	14
MATH 107, 109, 120, 350	4
PHYS 104	3
COMS 101, 102, or 301	6
HIST 201, 202	6
POLS 201, 202	3
PSY 101	3
ECO 201	

[1]Requirement for different schools of pharmacy vary considerably. Students should seek counsel from the Pre-Pharmacy advisor in the Department of Biological Sciences prior to enrollment.

CHEMISTRY, GEOSCIENCES, AND ENVIRONMENTAL SCIENCES

Dr. Beth Rinard, Head

Science Building, Room 117

Box T-0540

(254) 968-9143

http://www.tarleton.edu/cges

offers programs of study leading to the Bachelor of Science degree in Chemistry (with concentrations in professional chemistry, teacher certification in Chemistry (8-12) or Physical Science (8-12), biochemistry, forensic chemistry, an interdisciplinary field, or as a pre-medical, pre-dental, or pre-pharmacy program) and the Bachelor of Science degree in Geoscience, with concentrations in Geology, Environmental Science, Earth Science, Hydrogeology, and a teacher certification program in Science (8-12). On the graduate level, a Master of Science degree in Environmental Science is offered. For further information about this program, see the graduate section of the catalog.

THE BACHELOR OF SCIENCE DEGREE IN CHEMISTRY

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
CHEM 105, CHEM 108, CHEM 201, CHEM 202, CHEM 307, CHEM 323, CHEM 408, CHEM 486(Library Research)	29
MATH 120[1], MATH 209[2]	8
PHYS 104, PHYS 105 or PHYS 122[8], PHYS 242[8]	8
ENGL 309	3
CIS or CS Elective	3
Additional Courses Required for Support Areas	
For BS in Chemistry- Professional Chemistry	
Foreign Language	8
Advanced Electives	5
BIOL 120, BIOL 121	8
CHEM 324, CHEM 427, CHEM 428, CHEM 474	13
Advanced CHEM Electives[3]	3
For BS in Chemistry with Teacher Certification, Chemistry (8-12)	
PSY 220 or PSY 303, RDG 351, EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	24
Advanced CHEM[3]	6
GEOL 107	4
CHEM 486(Lab Safety)	1
Electives	2
For BS in Chemistry with Teacher Certification, Physical Science (8-12)	
PSY 220 or PSY 303, RDG 351, EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	24
Advanced Chem[3]	6
GEOL 107	4
MATH 306 or MATH 333	3-4
PHYS 334, CHEM 486(Lab Safety)	4
For BS in Chemistry- Forensic Chemistry[1] #	
CHEM 427, CHEM 474	6
Advanced CHEM[3]	2
BIOL 120, BIOL 307, BIOL 478	11
CJ 131, CJ 232, CJ 235	9
From, CJ 305, CJ 315, CJ 416, CJ 425	9
For BS in Chemistry- Interdisciplinary Chemistry[1]	
Supporting field, 14 hours advanced[5]	21
Advanced Elective	4
From, GEOL 105, GEOL 106, GEOL 107, BIOL 120, BIOL 121	4
Advanced CHEM Electives[3]	8
For BS in Chemistry- Biochemistry	
CHEM 427 or CHEM 445, CHEM 474, CHEM 475	9
BIOL 120, BIOL 121, BIOL 303, BIOL 307, BIOL 313, BIOL 478	23
Advanced Electives	5
For BS in Chemistry- Pre-Pharmacy[1] # #	
CHEM 445, CHEM 474	6
Advanced CHEM Electives[3]	2
BIOL 120, BIOL 121, BIOL 303, BIOL 307, BIOL 313	20
BIOL 475 or BIOL 478	3
MATH 300 or MATH 350	3
PSY 101 or ECO 201[3]	3
For BS in Chemistry- Pre-Medical/ Pre-Dental Program	
BIOL 120, BIOL 121, BIOL 306, BIOL 307	16
BIOL 385, BIOL 460, BIOL 461, BIOL 485	13

CHEM 445, CHEM 474	6
Advanced CHEM Elective[3]	2

[1]COMS 301 required for all concentrations areas except Teacher Certification, Biochemistry, and PreMedical.

[2]MATH requirement satisfied by MATH 120 or 209

[3]See additional courses required for concentrations for specific lab science requirements

[4]Arts elective must be advanced hours for Professional Chemistry and Forensics concentrations.

[5]Possible support fields include biology, geoscience, hydrology, physics, business administration, and other fields approved by department heads involved.

[6]General Education Social and Behavioral Elective must be PSY 101 or ECO 201.

[7]Check with specific pharmacy schools for details.

[8]Required for Professional Chemistry and Teacher Certification in Physical Science (8-12).

THE BACHELOR OF SCIENCE DEGREE IN GEOSCIENCES

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
CHEM 105, CHEM 108, HYDR 110, GEOL 105	14
Additional Courses Required for Concentrations	
Geology	
BIOL 120, BIOL 121 or PHYS 104, PHYS 105 or PHYS 122, PHYS 242	8
Electives, 8 hours advanced	12
GEOL 106, GEOL 300, GEOL 305, GEOL 306, GEOL 310, GEOL 312, GEOL 313, GEOL 314, GEOL 320, GEOL 405, GEOL 411, GEOL 412	40
ES 220, ES 413	6
From, MATH 118, MATH 120, MATH 209, MATH 300, MATH 350	8
Environmental Science	
AGRN 301, AGRN 312, CHEM 201 or CHEM 307 or CHEM 408	11-12
GEOL 107, GEOL 300, GEOL 314, GEOL 405	14
From, GEOL 310, GEOL 313, GEOL 320, GEOL 412	9-10
ES 220, ES 330, ES 340, ES 350, ES 413	15
From, MATH 107, MATH 109, MATH 120, MATH 209	6-8
MATH 300 or MATH 350	3-4
BIOL 120, BIOL 121, BIOL 401, BIOL 441	16
Earth Science	
BIOL 120, BIOL 121	8
GEOL 106, GEOL 107, GEOL 300, GEOL 310, GEOL 405	18
From, GEOL 305, GEOL 306, GEOL 312, GEOL 313, GEOL 314, GEOL 320, GEOL 411, GEOL 412	9-11
ES 220, ES 320, ES 330, ES 340, ES 350, ES 413	18
From, MATH 107, MATH 109, MATH 120, MATH 209, MATH 300, MATH 350	6-8
AGRN 301	4
Advanced Electives	11

[1]This course may be counted toward the general education requirement.

Teacher Certification, Science (8-12)	
ENGL 309	3
CHEM 201, CHEM 486	5
PHYS 104, PHYS 105	8
PHYS Elective	3
GEOL 106, GEOL 107, GEOL 486	9
From, ES 320, ES 330, ES 340, ES 350	9
BIOL 120, BIOL 121, BIOL 401, BIOL 470	15

From, MATH 107, MATH 109, MATH 120, MATH 209, MATH 300, MATH 350	6-8
PSY 303, RDG 351	6
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	18
Hydrogeology	
PHYS 122, PHYS 242	8
AGRN 301, CHEM 201, CHEM 307, CHEM 408	16
GEOL 300, GEOL 306, GEOL 310, GEOL 313, GEOL 314, GEOL 320, GEOL 405, GEOL 412	27
HYDR 311	3
ES 350, ES 413	6
From, MATH 118, MATH 120, MATH 209, MATH 306, MATH 333	11-12
MATH 300 or MATH 350	3-4

[1]CHEM 105 and 108 satisfy general education lab science requirements.

[2]See concentrations for MATH requirements.

ENGINEERING AND PHYSICS

Dr. Daniel K. Marble,

Hydrology and Engineering Building, Room 114

Box T-0390

(254) 968-9863

http://www.tarleton.edu/engrphys

The Department of Engineering and Physics provides degrees in Engineering Physics, Environmental Engineering, Computer Science, Hydrology, and Physics as well as providing the first two years of engineering course work required for transfer to other engineering programs. The departmental also provides paths of study for students interested in advanced study in medicine, dentistry, medical physics and nuclear engineering. The department offers undergraduate research opportunities with state of the art facilities including a 32" robotic telescope, 1 MV tandem particle accelerator, and hydrology research lab.

ENGINEERING PROGRAM

The Engineering Program at Tarleton State University prepares the student for further studies in specific engineering disciplines either at Tarleton State University or other colleges and universities. The Engineering Program comprises approximately one half of the course work required for a Bachelor of Science degree in Engineering and is the entry point for all students wishing to major in engineering. Entry into the Engineering Program requires registration in Trigonometry, Pre-calculus or higher. Once the designated Engineering courses in the table below have been completed with a "C" or better, the student may apply for admission into the upper level programs leading to a degree in an engineering discipline at Tarleton.

The student may instead choose to transfer to another engineering degree-granting college or university to complete the requirements for an engineering degree. For example, the Engineering Program is aligned with the current program at Texas A&M University for seamless transfer. Students wishing to transfer are encouraged to keep their advisor informed of their intentions, as requirements for different schools of engineering vary considerably.

Entering freshman Engineering students are evaluated for mathematics preparedness. The normal course progression calls for taking Mathematics 120 (Calculus I) as the first mathematics course. If the student is not prepared to take Calculus I as the first course, then he or she may be required to take MATH 107 (College Algebra), MATH 109 (Plane Trigonometry) or MATH 118 (Pre-Calculus) instead. It is strongly recommended that students who are not certain that they are well grounded in algebra and trigonometry come to Tarleton and take the placement tests early enough in the summer prior to first enrollment so they can take any necessary calculus preparatory courses in summer school if they wish.

SUGGESTED CURRICULUM FOR ENGINEERING:

ENGL 111, 112	6
PHYS 122[1], 242[1]	8
MATH 120[1]	4
HIST 201, 202	6
POLS 201, 202	6
HLTH 101	3
CHEM 108	4
MATH 209[1], 306, 333	11
ENGR 111[1], 112[1], 221[1], 222[1], 223	15

[1]These courses must be completed with a grade of "C" or better before the student can make application to the upper level engineering programs at Tarleton State University.

The Bachelor of Science Degree in Computer Science prepares graduates to enter the high-tech work force or to continue their studies in computer science or related disciplines at the graduate level. This program provides a strong foundation in computer science,

mathematics, and general science that is aligned with curriculum standards as set forth within the discipline. Students are encouraged to also specialize in a complementary area, through the support field of study.

THE BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
MATH 120, MATH 131[1], MATH 209, MATH 310	14
PHYS 122[1], PHYS 242[1]	8
Technical electives from, MATH 232, MATH 332, MATH 360 or approved advanced MATH/CIS or advanced C S	9
Support field, 12 hours advanced	24
CS 110, CS 221, CS 230, CS 241, CS 248, CS 343, CS 380, CS 389, CS 401, CS 451, CS 478	36
ENGL 309	3

[1]Course may be counted toward general education requirement.

The Engineering Physics program at Tarleton State University is an ABET accredited B.S. engineering degree program with emphases in selected areas of Electrical Engineering, Computer Engineering, and Materials Physics. Students are prepared for employment as an engineer and for engineering licensure, as well as for graduate studies in selected areas of Electrical Engineering, Computer Engineering or Physics. Extensive study in mathematics, engineering, and physics gives the Engineering Physics graduate the ability to design components, processes, and systems to meet specifications and the ability to work and communicate effectively in team-oriented, project-management-driven environments. Computer simulation and modern analytical tools are used to solve physical and electrical problems. Software development, hardware integration, and testing of microcomputers, microcontrollers, and design of microelectronic circuitry provide the graduate with the tools to apply computer and software-based solutions. Additional studies in ethics assure that the graduate understands engineers' special responsibilities to protect the health and well being of the general public. See more details at: http://www.tarleton.edu/engineering

The first two years of the Engineering Physics program consist of the courses in the Engineering Program. In order to ensure that students have the solid foundation needed for success in upper level coursework, the student must complete designated courses in the Engineering Program with a grade of "C" or better before being admitted into upper level Engineering Physics coursework.

THE BACHELOR OF SCIENCE DEGREE IN ENGINEERING PHYSICS

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
PHYS 122[1], PHYS 242[1], PHYS 334, PHYS 435	14
ENGR 111, ENGR 112, ENGR 221, ENGR 222, ENGR 223, ENGR 460	18
ENPH 225, ENPH 248, ENPH 314, ENPH 332, ENPH 343, ENPH 345, ENPH 430, ENPH 436, ENPH 441, ENPH 443	36
Advanced PHYS, ENGR, ENPH, or CS electives	9
MATH 120[1], MATH 209, MATH 306, MATH 333	15
CHEM 108	4

[1]Course may be counted toward general education requirement.

The Environmental Engineering program at Tarleton State University is relatively unique in the State of Texas in preparing students to work as environmental engineers at the baccalaureate level. Students are prepared for employment as an engineer, for engineering licensure, as well as for graduate studies. Extensive study in math, engineering, physics, chemistry, biology, and environmental engineering gives the graduate the ability to design components, processes, and systems to meet specifications and the ability to work and communicate effectively in team-oriented, project-management-driven environments. Computer simulation and modern analytical tools are used to solve environmental engineering problems within the fields of water supply and resources, environmental systems modeling, environmental chemistry, wastewater management, solid waste management, hazardous waste management, atmospheric systems and air pollution control, and environmental and occupational health. Students will take a survey course covering all aspects of environmental engineering followed by more comprehensive studies in water resources, water and wastewater management, systems modeling and either air pollution monitoring and control or solid and hazardous waste management. Additional studies in ethics assure that the graduate understands engineers' special responsibilities to protect the health and well being of the general public. See more details at: http://www.tarleton.edu/engineering.

The first two years of the Environmental Engineering program consist of the courses in the Engineering Program. In order to ensure that students have the solid foundation needed for success in upper level coursework, the student must complete designated courses in the Engineering Program with a grade of "C" or better before being admitted into upper level Environmental Engineering coursework.

THE BACHELOR OF SCIENCE DEGREE IN ENVIRONMENTAL ENGINEERING

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
BIOL 441, CHEM 108, CHEM 201	12
PHYS 122[1], PHYS 242[1]	8
GEOL 105	3
ENGR 111, ENGR 112, ENGR 221, ENGR 222, ENGR 223, ENGR 303[1], ENGR 460	21
ENPH 225	4
ENVE 210, ENVE 211, ENVE 300, ENVE 301, ENVE 310, ENVE 320, ENVE 402, ENVE 410, ENVE 420, ENVE 430	37
MATH 120[1], MATH 209, MATH 306, MATH 311, MATH 333	18

[1]May be taken as part of the general education requirements.

NUCLEAR ENGINEERING

Nuclear power will be an important component in meeting the United States energy needs of the future. The nuclear power industry has already petitioned the nuclear regulatory commission to construct four new reactors in Texas and is expected to build at least eight new reactors over the next twenty years. Not only will there be a need for skilled workers to man these new facilities, but also to replace the aging existing nuclear workforce. Tarleton State University is working with the Nuclear Power Institute, Texas Electronics Coalition for Physic and the Nuclear Engineering Department at Texas A&M University to meet this need. Tarleton is located approximately 30 miles southwest of Comanche Peak nuclear plant which is the site of two of Texas' four existing reactors and the proposed site of two additional reactors. Tarleton students have access to nuclear engineering classes from Texas A&M University through distance learning to prepare for advanced study in nuclear engineering as well as special four class sequence to reduce the time required for certification as a Nuclear Power Operator. Engineering Physics majors may use these courses to fulfill their 9 hours of advanced technical electives while Physics majors may use up to 26 hours to fulfill their support field. During Fall 2009, Tarleton was second only to Texas A&M in the number of student taking nuclear engineering courses in Texas.

Tarleton State University offers the only Bachelor of Science in Hydrology & Water Resources in Texas, and is one of 13 such programs in the United States. The Hydrology degree program was developed after consultation with water resource specialists from throughout the nation and is designed to prepare students for professional positions in hydrology and water resource development. Hydrology is the study of the behavior of water in nature. Water is our most important natural resource. Without it, there would be no life on earth. Managing its use so we do not run out of water is a challenge for today and tomorrow. The water resources expert knows how to manage the water nature provides and how to distribute it to the places it is needed in the proper quantity and with the proper quality for the benefit of man.

One of the unique features of the Hydrology and Water Resources Program at Tarleton State University is that each student is required to complete an internship before graduation (see HYDR 440-Internship in the course offerings section of this catalog). The manner in which this requirement is met is for the student to work from 9 to 13 weeks (generally 40 hours a week) for a company or agency that has some expertise in hydrology. Often this leads to full#time employment at the end of the internship. Departmental faculty will assist students in finding an appropriate internship sponsor. Enrollment in HYDR 440 requires advisor and department head approval. The student is required to receive a grade of C or higher in all required HYDR, BIOL, GEOL, CHEM, MATH, ENGR, ENPH, CS, ECO, AGRN, AEN, AEC, and PHYS courses for graduation.

THE BACHELOR OF SCIENCE DEGREE IN HYDROLOGY AND WATER RESOURCES

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
HYDR 110, HYDR 211, HYDR 300, HYDR 310, HYDR 320, HYDR 410, HYDR 420, HYDR 430, HYDR 440, HYDR 450	33
PHYS 122[1], PHYS 242, CHEM 108[1], CHEM 201, GEOL 105	19
MATH 120[1], MATH 209, MATH 311, MATH 333	15
Additional Courses Required for Courses required for Concentrations	
Hydrology Agriculture	
AGSD 318, AGRN 301, AGRN 302, AGRN 312	15

AEC 105, HYDR 311, HYDR 488, MATH 360	12
Hydrology Biology	
BIOL 120, BIOL 121, BIOL 307, BIOL 441	16
HYDR 311, HYDR 488, MATH 360	9
Hydrology Chemistry	
BIOL 121, CHEM 202, CHEM 314, CHEM 323, CHEM 324	19
HYDR 311, HYDR 488	6
Hydrology Computer Science	
HYDR 311, HYDR 488, MATH 360, CIS 331	12
CS 110, CS 221, CS 344, CS 401	12
Hydrology Economics	
ECO 201, ECO 202, ECO 301, ECO 302, ECO 304, ECO 306	18
HYDR 311, HYDR 488	6
Hydrology Engineering	
HYDR 488, MATH 360	6
ENGR 111, ENGR 112, ENGR 221, ENGR 222, ENGR 303, ENGR 460, ENPH 225 or ENPH 248	22
Hydrology Geosciences	
GEOL 106, GEOL 300, GEOL 310, GEOL 313	15
From, GEOL 312, GEOL 314, GEOL 412 or ES 413	3
HYDR 311, HYDR 488	6

[1] Course may be counted toward general education requirement.

A student who wishes to be eligible to take the Engineering Fundamentals Examination as a graduate of an engineering-related science program should take the following courses:

ENGR 221	Principles of Engineering I	ENGR 303 Engineering Economy
ENGR 222	Principles of Engineering II	ENPH 225 Electrical Circuit Theory
ENGR 223	Principles of Engineering III	ENPH 248 Introduction to Digital Sy
MATH 306	Differential Equations	

A typical curriculum incorporating these courses may be obtained from the Division of Hydrology and Water Resources/Engineering. Completing these courses allows the student to minor in engineering.

Physics is the science that investigates and tries to understand the basic laws of nature. In this pursuit, it deals with the entire range of natural phenomena from the smallest domain of sub-nuclear particles to the largest domain of distant objects in the universe. This breadth of interests is reflected in the type of work pursued by physicists. Some are interested in research on problems that are at the frontiers of knowledge. Some apply this newly acquired knowledge to make practical advances in fields like engineering. Still others use the knowledge of physics as a basis for careers in medicine, law, teaching or administration. The Tarleton physics program is one of the best equipped undergraduate programs in Texas with state-of-the-art undergraduate research facilities including a 32" robotic telescope and 1 MV tandem particle accelerator. The physics program provides several different tracks including medical physics for students interested in medicine, dentistry, or medical physics and an astronomy track so that students can tailor the program to meet their educational goals. By adding two or three additional courses with a support area of mathematics or computer science, a student in the classical can obtain a second bachelors degree in their support area. For students interested in teaching at the high school level, secondary (grades 8-12) certification in either Physical Science or Math/Physics is available. Through Tarleton's membership in the Texas Electronic Coalition for Physics and students may take upper-level elective physics courses from professors across the Texas A&M System. Through Tarleton's membership in the Nuclear Power Institute students may take nuclear engineering courses from Texas A&M's nuclear engineering department to prepare the student for entry into nuclear engineering graduate program.

THE BACHELOR OF SCIENCE DEGREE IN PHYSICS

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
PHYS 122[1], PHYS 242[1], PHYS 331, PHYS 332, PHYS 334, PHYS 435	20
MATH 120[1], MATH 209, MATH 306, MATH 333	15
For BS in Physics Classical Track	
PHYS 333, PHYS 430, PHYS 488	9
PHYS Electives, 6 hours advanced	9
Supporting field, 12 hours advanced	26
Electives	4
Approved CS elective	3
MATH 232	3
For BS in Physics with Teacher Certification, Physical Science (8-12)	

EDU 320, EDU 330, EDU 430, EDU 435, EDU 490, PSY 220 or PSY 303, RDG 351	24
PHYS electives, 6 hours advanced	9
PHYS 333, PHYS 430	6
MATH 404	3
ENGL 309	3
CHEM 105, CHEM 108, CHEM 201, CHEM 486	13

For BS in Physics with Teacher Certification, Mathematics/Physics (8-12)

MATH 302, MATH 311, MATH 404	9
PHYS 333, PHYS 430	6
PHYS Electives, 6 hours advanced	9
Elective	3
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490, PSY 220 or PSY 303, RDG 351	24
Approved CS Elective	3
ENGL 309	3

For Medical Physics (Pre-Professional)

CHEM 105, CHEM 108, CHEM 201, CHEM 202	16
BIOL 120, BIOL 121, BIOL 474, BIOL 475	14
PHYS 350, PHYS 432, PHYS 437, PHYS 450	12
MATH 232, MATH 311	6
Advanced Electives from CS, PHYS, CHEM, BIOL, ENGR, ENPH, or MATH	5

For Astronomy

PHYS 103, PHYS 113, PHYS 333, PHYS 403, PHYS 430, PHYS 488	NaN
MATH 232	3
Advanced PHYS Elective	3
Supporting field, 12 hours advanced	26
CS elective	3

[1] Course may be counted toward general education requirement.

ENGINEERING TECHNOLOGY

Dr. George Mollick,

Engineering Technology Building, Room 100

Box T-0400

(254) 968-9010

http://www.tarleton.edu/engtech

The Department of Engineering Technology offers programs of study leading to a Bachelor of Science degree in Manufacturing Engineering Technology, a Bachelor of Science degree in Industrial Technology, and a Bachelor of Applied Arts and Sciences degree in Manufacturing and Industrial Management, and a Master of Science degree in Manufacturing Quality and Leadership.

Bachelor of Science in Manufacturing Engineering Technology

The Bachelor of Science degree in Manufacturing Engineering Technology educates students in a wide range of manufacturing related areas: quality, ergonomics, production planning, management, control systems, productivity, automated systems, and computer modeling. The Manufacturing Engineering Technology courses are supplemented with a foundation of Industrial Technology courses and emphases in mathematics, statistics, and the sciences. A wide choice of electives compliments the degree, allowing the student maximum flexibility in the areas of business, science, mathematics, computer information systems, and pre-engineering.

Bachelor of Science in Industrial Technology

The Bachelor of Science degree in Industrial Technology provides a common core of courses and four emphasis areas from which to choose: General Industrial Technology, Industrial Design, Manufacturing Operations, and Technology Education. These emphasis areas provide students with the flexibility to tailor their degree programs to their particular interests.

1. **General Industrial Technology** - This emphasis area provides a broad range of experiences designed to produce the maximum flexibility upon entering the workforce. A broad range of courses is used to introduce the maximum number of concepts in all areas of manufacturing and construction. Students may choose any minor that will complement their interests.
2. **Industrial Design** - This emphasis area provides extensive work in computer-aided design, computer-aided manufacturing, and computer programming to develop an integrated approach to mechanical and industrial design. The common core courses are supplemented with additional design and manufacturing experiences to provide a comprehensive understanding of design and its application to manufacturing.

3. **Manufacturing Operations** - This emphasis area provides an expanded minor in business administration that includes courses in accounting, management, statistics, international business and business law. Additional courses in manufacturing management, productivity, and quality management provide an excellent combination of business and manufacturing concepts.
4. **Technology Education (Secondary Teacher Certification)** - This emphasis area provides students with the professional education courses that lead to state certification to teach Technology Education courses at the secondary level. This combination of courses provides an excellent range of concepts that students can apply in many educational and training fields.

Bachelor of Applied Arts and Sciences in Manufacturing and Industrial Management

The Bachelor of Applied Arts and Sciences (BAAS) degree is designed for students who have training in a technical area. Education received at technical schools, community colleges, military technical schools, and employer-sponsored training schools may be applied toward the degree. With appropriate documentation, the technical training may be supplemented with a maximum of 15-21 semester credit hours for work experience. The degree allows students to choose between two emphasis areas.

1. **Industrial Occupations** - This emphasis area allows students to custom design their degree by supplementing their technical training with advanced courses from the Department of Engineering Technology and other departments on campus. The student will work with an advisor to select courses that meet the student's individual needs.
2. **Technology Education (Secondary Teacher Certification)** - This emphasis area provides students with the professional education courses that lead to state certification to teach Technology Education courses at the secondary level. This combination of courses provides an excellent range of concepts that students can apply in many educational and training fields.

THE BACHELOR OF APPLIED ARTS AND SCIENCES DEGREE IN MANUFACTURING AND INDUSTRIAL MANAGEMENT

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
Additional Courses Required for Emphasis	
Industrial Occupations Emphasis	
Occupational Specialization[1]	36
Advanced Electives (not IT or MET)	12
Advanced IT or MET Electives	24
IT 318	3
MATH 109 or higher	3
Technology Education Emphasis (Secondary Teacher Certification)	
CIS 103, COMS 214	6
PSY 303 or PSY 220 or FCS 300, RDG 351, EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	24
IT 106, IT 117, IT 235, IT 303, IT 314, IT 324, IT 393	21
Occupational Specialization[2]	33
ENGL 309	3
MATH 109 or higher	3

[1]May include work from junior or technical colleges, employer-sponsored training, military schools, or a maximum of 21 semester credit hours for work experience.

[2]May include work from junior or technical colleges, employer-sponsored training, or maximum of 15 semester credit hours for work experience.

Some emphasis areas specify the course that students should take to satisfy this general education requirement. CHEM 105 and PHYS 122 are required for BS in MET.

THE BACHELOR OF SCIENCE DEGREE IN INDUSTRIAL TECHNOLOGY

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
MATH 109 or higher	3
IT 105, IT 117, IT 235, IT 303, IT 317, IT 324, IT 345, IT 350	24
Additional Courses Required for Emphasis Area	
General Industrial Technology Emphasis	
IT 106, IT 318, IT 320, IT 495	12
IT or MET electives	9
MET 216, MET 336	6
Electives from any field, 18 hours advanced[1]	24
Industrial Design Emphasis	
IT 318, IT 405, IT 450, IT 461, IT 495	15
IT or MET electives	9

MET 336	3
CIS 110, CIS 240, CIS 241, CIS 315	12
Advanced CIS electives	6
Electives from any field, 3 hours advanced[1]	6
Manufacturing Operations Emphasis	
IT 318, IT 320, IT 495	9
IT or MET electives	6
MET 216, MET 386, MET 446	9
ENGR 303	3
Electives	6
ACC 203, MGMT 301, MGMT 303	9
GB 311 or MATH 300	3
GB 432, GB 444	6
Technology Education Emphasis (Secondary Teacher Certification)	
IT 106, IT 314, IT 325, IT 393, IT 405	15
MET 216, MET 336	6
AGSD 230, CIS 103, COMS 214, ENGL 309	12
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490, RDG 351, PSY 303 or PSY 220 or FCS 300	24

[1]Some students may choose to use 18 hours of electives for a minor in any field other than IT or MET.
Some emphasis areas specify the course that students should take to satisfy this general education requirement. CHEM 105 and PHYS 122 are required for BS in MET.

THE BACHELOR OF SCIENCE DEGREE IN MANUFACTURING ENGINEERING TECHNOLOGY

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
MET 216, MET 326, MET 336, MET 386, MET 426, MET 436, MET 446, MET 476	24
MATH 109, MATH 120, MATH 209, MATH 300	14
CS 110 or CIS 110	3
ENGR 303	3
IT 105, IT 117, IT 235, IT 303, IT 318, IT 324 or IT 325, IT 350, IT 495	24
CHEM 105[1], PHYS 122[1]	8
Approved Electives, 3 hours advanced	9

[1]Course may be counted toward general education requirement.

MATHEMATICS

Dr. Bryant Wyatt, Head

Mathematics Building, Room 142

Box T-0470

(254) 968-9168

http://www.tarleton.edu/math

The Department of Mathematics offers programs of study leading to the Bachelor of Science and Master of Science degrees in Mathematics.

Mathematics

The Bachelor of Science in Mathematics provides a program of study that prepares students who are: 1) seeking to teach mathematics at the secondary level; 2) seeking employment in industry; or 3) seeking to pursue graduate study in Mathematics. A minor in Mathematics requires a minimum of 18 hours of MATH, which will include MATH 209 and at least 6 advanced MATH hours. On the graduate level, the Master of Science in Mathematics provides a program of study that prepares students beyond the undergraduate level for employment in industry or higher education. Students completing the M.S. in Mathematics also receive preparatory work for pursuing a doctoral degree in mathematics or mathematics education. For further information about the graduate program, see the graduate section of the catalog. For more information about the Mathematics program, visit the departmental web site at www.tarleton.edu/math.

THE BACHELOR OF SCIENCE DEGREE IN MATHEMATICS

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
MATH 120[1], MATH 209, MATH 232, MATH 306, MATH 310, MATH 311, MATH 332, MATH 333, MATH 409, MATH 411, MATH 432	36
PHYS 122[1]	4
CS 102 or CS 110, CS 344	6
For BS in Mathematics with Secondary Certification[2]	
MATH 301, MATH 402, MATH 402, MATH 404, MATH 405	15
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	18
PSY 220 or PSY 303 or FCS 300	3
RDG 351	3
ENGL 309	3
For BS in Mathematics without Certification[2]	
9 hours from, MATH 301, MATH 360, MATH 420, MATH 488, MATH 490	9
Electives	6
Supporting field, 12 hours advanced[3]	24
For BS in Mathematics with Mathematics/Physics Certification (8-12)	
MATH 301, MATH 402, MATH 404	9
PHYS 242[2], PHYS 334, PHYS 435	10
Advanced PHYS Electives	3
EDU 320, EDU 330, EDU 430, EDU 435, EDU 490	18
PSY 220 or PSY 303 or FCS 300	3
RDG 351	3
ENGL 309	3

[1]May satisfy university general education requirement.

[2]PHYS 122 and 242 are recommended for fulfillment of general education Lab Science requirement.

[3]Courses for supporting field are to be chosen from an academic area in which mathematics is applicable. Supporting field must be developed in consultation with the department heads involved.

MEDICAL LABORATORY SCIENCES

Dr. Sally S. Lewis, Head

Schaffer Building, 1501 Enderly Place, Fort Worth, Texas 76104

Box T-0745

On Campus: 7-0221; Off Campus: (817) 926-1101

http://www.tarleton.edu/clincallab

The Department of Medical Laboratory Sciences offers one degree/ certificate program leading to a Bachelor of Science in Medical Laboratory Science and two degree/certificate programs leading to Associate of Applied Science degrees in Histotechnology and Medical Laboratory Technology and a graduate certificate in molecular diagnostics.

THE BACHELOR OF SCIENCE DEGREE IN Medical LABORATORY SCIENCE

The fourth year of the Medical Laboratory Science degree/certificate program is completed at the Department of Medical Laboratory Sciences, located in Fort Worth, Texas. The certificate program is accredited by the National Accrediting Agency for Medical Laboratory Sciences (NAACLS) 5600 N. Riven Road, Suite 720, Rosemont, IL 60018. The Department consists of a teaching center and numerous clinical affiliates located in the Dallas/Fort Worth Metroplex and surrounding areas. The teaching center is housed in the Schaffer Building in Fort Worth, which consists of six lecture rooms, six laboratories, a computer lab, and a library. A continuous 16-month professional laboratory curriculum is offered, totaling 54 semester hours, with 10 months in the teaching center and 6 months in the clinical affiliate.

Twenty students are admitted to the certification program in early January and July of each year, with application deadlines of the preceding September 1 and March 1, respectively. Admission is on a competitive basis. An overall minimum GPA of 2.5/4.00, with a minimum of 2.8 in science and math, is necessary. NAACLS specifies that prerequisite college courses and numbers of credits required shall be those necessary to ensure admission of individuals prepared for the educational program. Prerequisite content area includes general chemistry, organic and/or biochemistry, general biological sciences, microbiology, and mathematics. Survey courses do not qualify as fulfillment of chemistry and biological science prerequisites. Remedial mathematics courses will not satisfy the mathematics requirements.

Students entering the program from other universities must fulfill the degree requirements of their institution, and that institution must provide a statement of the acceptance of the 54 hours awarded by Tarleton State University for graduation requirements. By special

arrangement prior to entrance, students may elect to receive the degree from their original college or university or from Tarleton State University.

Students who have already obtained a baccalaureate degree may also enter the program, provided they have met the NAACLS minimum requirements in biology, chemistry, and math.

Successful completion of courses will be determined with the maintenance of a grade of C or better in lecture and laboratory courses. All students are admitted on a probationary status and progressive academic achievement must be maintained.

Upon successful completion of the certificate program, the Bachelor of Science degree may also be awarded. The student is also eligible to challenge national board/credential examinations offered by various professional associations. For further information concerning the Medical Laboratory Science program, contact:

Department of Medical Laboratory Sciences
MLS Advisor: Ms. Virginia Reyes
1501 Enderly Place
Fort Worth, TX 76104
(817) 926-1101

BACHELOR OF APPLIED TECHNOLOGY OF HEALTH PROFESSIONS TECHNOLOGY

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
Approved Certificate Program	33
MLS 448	1
HPT 320, HPT 350, HPT 404, HPT 405, HPT 449, HPT 450	18
MGMT 320, ENGL 309	6
ADMS 318, ADMS 413, CIS 312, CIS 315, CIS 479, COMS 404, ENGL 312, ENGL 412, GB 434, FCS 210, MATH 350, MGMT 301, MGMT 302, MGMT 303, PSY 301, PSY 303, PSY 311, SOC 304	21

THE BACHELOR OF SCIENCE DEGREE IN MEDICAL LABORATORY SCIENCE

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
BIOL 120, BIOL 121, BIOL 307, BIOL 385, BIOL 460	48
MLS 414, MLS 415, MLS 416, MLS 424, CLS 425, MLS 426, MLS 427, MLS 428, MLS 434, MLS 435, MLS 436, MLS 437, MLS 438, MLS 444, MLS 445, MLS 446, MLS 447, MLS 448, MLS 451, MLS 452, MLS 464, MLS 465, MLS 466, MLS 467, MLS 474, MLS 475, MLS 476, MLS 477, MLS 478, MLS 479, MLS 482, MLS 491, MLS 492, MLS 493, MLS 494, MLS 495	NaN
CHEM 105[1], CHEM 108[1], CHEM 201, CHEM 474	15
MATH 109	3

[1]Course may be counted toward general education requirement.

Additional Courses required for MLS/MT Certification

In addition to the 48 hours of MLS courses required for the BS degree, certification requires an additional 6 hours including MLS 502, 504, and 508.

NURSING

Dr. Elaine Evans, Head

Nursing Center

Box T-0500

(254) 968-9139

http://www.tarleton.edu/nursing

The Department of Nursing offers the Bachelor of Science in Nursing (BSN) Degree for beginning (generic) and licensed (LVN) students. Upon successful completion of the BSN curriculum, graduates are eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN).

OBJECTIVES

The Department's nursing graduates address the challenges of a dynamic health care delivery system by initiating resourceful solutions for health promotion, risk reduction, and disease management.

Based on the core values and mission statements of the university, College of Science and Technology, and the Department of Nursing, the following behaviors reflect expected outcomes (terminal objectives) for the nursing program. Graduates of the baccalaureate nursing program will:

Provider of Care (Doing)

1. Function as a knowledge worker with strong critical reasoning, clinical judgment, communication and assessment skills.
2. Practice within complex health care systems at a beginning proficiency and efficiency level to evaluate patient changes and progress over time and implement evidence-based nursing interventions to safely manage acute and chronic care of patients.
3. Provide direct and indirect safe care for individuals, families, groups and populations with a focus on health promotion and risk reduction across the lifespan and across the continuum of healthcare environments.
4. Provide patient-centered, compassionate and evidence-based care that identifies respects and addresses patient and family differences, values, preferences and expressed needs.
5. Use skills of inquiry, analysis, information literacy, information management and emerging technology methods to address practice issues and communicate effectively.

Designer, Coordinator & Manager of Care (Leading)

6. Manage care transitions, be an active participant on the inter/intra-professional team, identify system issues, and develop working skills in delegation, prioritization, and oversight of care.
7. Employ principles of quality improvement, healthcare policy, and cost-effectiveness to participate in the development and initiation of effective plans for changes in microsystem and/or system-wide practice environments that lead to improvements in the quality of healthcare delivery and patient outcomes.

Member of a Profession (Being)

8. Develop and demonstrate professional standards, attitudes and values that are fundamental to the discipline of nursing.
9. Demonstrate professionalism, including attention to appearance, demeanor, respect for self and others, and attention to professional and personal boundaries with patients and families as well as among caregivers.
10. Participate in professional and civic organizations to support and advocate for agendas that enhance high quality, cost effective health care, and/or the advancement of the profession.
11. Engage in continuous self-evaluation and life-long learning to foster professional growth and development, to improve own practice and maintain a current knowledge base.

CLINICAL EXPERIENCES

Clinical experiences are an integral part of the nursing curriculum, and a complementary relationship exists between classroom and clinical components of the program. On campus simulation labs as well as hospitals and other clinical agencies in Brown, Bosque, Comanche, Eastland, Erath, Hood, Johnson, Palo Pinto, Parker, and Somervell Counties are used for student clinical experiences. The VA Hospital in Waco is also used to provide an in-patient psychiatric experience. Students travel to Dallas for an in-patient pediatric clinical and to Waco for clinical experiences during their senior year.

All clinical experiences are under the supervision of a University nursing faculty member. Although a student's place of residence is considered when planning clinical experiences, the primary consideration is the learning needs of the student. Therefore, students are expected to travel to several clinical agencies during the program of study. Clinical experiences are scheduled during day and evening hours.

ADVISEMENT AND COUNSELING

Appointments with nursing faculty advisors may be scheduled Monday thorough Friday through the secretary of the Department of Nursing at 254-968-9139 or 9717. Students should visit with a nursing faculty advisor early in their course of study to learn about entry requirements and the admission process. Students should also visit with a faculty advisor each semester prior to registering for courses.

PROGRAM ENTRY AND EDUCATIONAL MOBILITY

Graduates of vocational, associate degree/diploma and baccalaureate nursing programs acquire a common core of knowledge, attitudes, and cognitive and psychomotor skills. However, there are distinct differences in the breadth, depth, scope of preparation, and knowledge presented to students in each type of program. A basic premise of Tarleton State University's innovative multiple entry nursing program, is acknowledgement of previous learning in order to provide career mobility. This is balanced against a concern for maintaining high quality in the educational program and assuring the public of the quality of the education of the graduate. For purposes of program entry, eligible groups are defined as follows:

Generic Students are those students with no previous formal nursing education. Generic Students enter the program through NUR 250. NUR 250 is a preadmission course and serves as the applicant pool for the program. Students are not required to complete the program application process to take NUR 250. Passing NUR 250 does not guarantee admission to the program. Students may take NUR 250 as early as the first semester of their sophomore year or when most of the non-nursing degree requirements are completed.

Some highly qualified students who have all non-nursing courses completed and have completed the nursing application process by the deadline may be eligible to take NUR 250 with the Sophomore Semester II (NUR 255, 260, 265, and 270) nursing courses. Notification of admission is required before student may participate in this process.

LVNs are those graduates of practical or vocational nursing programs who hold a current license to practice nursing in Texas. LVNs receive credit for some nursing courses upon successful completion of the transition semester. LVNs must be admitted to the program before any nursing courses may be taken. LVNs enter the program through a transition semester (NUR 301, 305, 316 and 322). LVNs should wait to apply to take the transition semester when almost all of the non-nursing degree requirements are completed.

NURSING PROGRAM ADMISSION PROCESS

A point system is used to select all students (generic and LVN) for admission to the Nursing Program at Tarleton State University (TSU). Students who submit all application materials and *TEAS® scores by the deadline and meet admission requirements will be ranked on a list in descending order according to their total number of points. Slots will be filled from the point list until classes are full. The point list will be eliminated immediately after the last date to register for university credit. Students not admitted must submit a new application to be considered for the next admission cycle.

Application to the nursing program is separate from and in addition to the application to Tarleton. To be considered for the program admission the individual MUST meet admission requirements and submit application materials and *TEAS® scores to the Department of Nursing and application materials to the Tarleton State University Office of Admissions on or before the deadline of March 1st for the fall semester and September 1st for the spring semester.

Department of Nursing application materials are available in the Nursing Office. The nursing program application must be submitted between December 1 to March 1 for Fall & June 1 to September 1 for Spring). Applications submitted outside of this timeframe will not be considered.

Students may take the TEAS® at any time during the process of completing the non-nursing degree requirements – before, during or after. However, it may be beneficial to wait until completion of five to eight program degree requirement courses before taking the TEAS®.

Admission Requirements

1. GPA of 2.75 or higher on specific completed English and Science program prerequisite courses (BIOL 219, 220, and 307, CHEM 103 or 105, and ENGL 111 and 112).
2. *Composite score greater than or equal to the national baccalaureate program average on the Test of Essential Academic Skills (TEAS®) or have 1110 or higher on the SAT, or 24 or higher on the ACT.

Only TEAS® scores submitted from an authorized testing center will be accepted (directly from TSU testing center or with testing center seal/signature if taken at a college/university other that TSU).

3. Achieve a minimum of 110 selection points before the residency points are added.
4. Ability to complete all program non-nursing degree requirement courses with a minimum grade of C prior to the program enrollment.
5. Eligibility for RN licensure upon graduation. All undergraduate applicants who are admitted to the Department of Nursing are required to complete a criminal background check. No student will be allowed program entry without a clear report or a letter from the Texas Board of Nursing certifying that any criminal history is not a danger to the public.

Full Admission

Students are considered for full admission to the undergraduate nursing program if all of the admission requirements 1-4 described in the previous section are fully met.

Conditional Admission

Students are eligible for consideration for conditional admission to the undergraduate nursing program if there are no more than five (5) outstanding non-nursing courses required to complete the nursing degree by the deadline and all the admission requirements 1-4 are fully met.

PROGRESSION AND RETENTION

The following criteria have been established by the Department of Nursing for progression and retention:

A student may progress in the program when the following conditions are met:

1. Satisfactory completion of the Tarleton State University requirements for progression.
2. Successful completion of required nursing and non-nursing courses with a minimum grade of C.
3. Successful completion of prerequisite courses for each nursing course.

4. Successful completion of both the theory and clinical portion of each nursing course with a clinical component. Failure in one component constitutes failure of the course and if allowed to repeat the course, both the clinical and theory components must be repeated.

Following admission to the program, a student must:

1. Complete all nursing courses at Tarleton State University which are required for the degree.
2. Seek permission from the Department Head prior to enrolling in core curriculum and non-nursing degree requirements at other universities or colleges.

The student must request permission to repeat a nursing course due to failure or withdrawal. The student must write a letter of petition to the admission committee.

1. This petition must include:
   - Reason for withdrawal or failure to successfully complete the course.
   - Steps which student will take to insure successful completion of course when repeated.
   - Date corrective steps will be completed.
2. In judging whether a student should be given the opportunity to repeat a nursing course, the SAMAS Committee will assess the following information:
   - Student's overall academic performance - student's GPA on required courses and review of the transcript for pattern of course loads, withdrawals, and number of repeated courses.
   - The congruence of the student's plans for corrective action in the letter of petition with the stated reasons for failure. The feasibility of the plan is also assessed.
   - The student file to determine adherence to program standards and clinical performance in the present or previous courses
3. Permission to repeat a course, if granted, is on a space available basis. The student must usually wait at least one semester before being allowed to repeat a course.

A student will be unable to progress in the program if any two nursing courses are failed or any one course is failed twice.

RE-ADMISSION TO THE DEPARTMENT OF NURSING

Re-admission to the Department of Nursing is not automatic. Students who have an interruption in the normal progression of nursing courses must gain permission before taking any nursing course. An interruption is defined as an inability to achieve a passing grade, withdrawal, or non-enrollment called "stop out".

The Department of Nursing Student Affairs, Matriculation and Academic Standards (SAMAS) Committee evaluates the student's request for readmission or to retake any nursing course. The SAMAS committee grants or denies the request according to the student's general academic history, nursing course grades, clinical evaluations, and potential for success. Readmission to the nursing program or permission to retake any course is based on the professional judgment of SAMAS Committee members and is contingent upon class size (space available). Students will receive a letter from the Department Head informing the student of the decision of the SAMAS) Committee.

Students who have withdrawn from a course or courses or fail to achieve a passing grade in a course should follow the procedure outlined in the **Progression Policy.**

When a student, following program admission, has an interruption due to non-enrollment in the next nursing course sequence, the student is considered a "stop out". Students who "stop out" must complete any university requirements for readmission and complete the following requirements for the Department of Nursing **by March 1** for fall semester or **September 1** for the spring semester. Students must be able to complete the BSN program within six (6) calendar years after completing NUR 250. A student needing additional time to complete the nursing program must submit a written request to the Department Head for the extension.

- After a lapse of one semester, students interested in returning to the program must notify the SAMAS Committee in writing of their desire to return. If the semester absence was due to a major health problem, a physician's clearance must be submitted in order to return to classes and clinical. Students must have the appropriate prerequisite courses to progress and meet with an advisor prior to registering to develop a degree to determine if all curricular and program requirements are met. Students must undergo testing for the presence of drugs prior to reentering the program. Readmission will be contingent on fulfilling any requirements specified in a letter from the Department Head.
- After a lapse of two semesters or more, students who "stop out" in addition to the above requirements must also:
  1. Submit a completed nursing program application.
  2. Adhere to the most current catalog requirements.
  3. Submit a completed current physical examination form.
  4. Submit a current CPR Certification (adult and child), current tuberculin skin test, pay malpractice insurance, and fulfill any other application requirements specified in the readmission letter from the Department Head.
  5. Validate competency in clinical skills.

STANDARDIZED ACHIEVEMENT EXAMINATIONS

Standardized achievement examinations may be administered throughout the nursing program. In addition to fulfilling the academic requirements of the university and the Nursing program, all students must take a standardized comprehensive achievement examination in the final semester of the nursing program in order to graduate.

EXPENSES OF THE NURSING PROGRAM

In addition to general university tuition and fees, the student majoring in nursing assumes financial responsibility for payment of criminal background check, uniforms, and clinical accessories. Course fees collected through university tuition and fee structure provide funds to pay the student's malpractice insurance, standardized achievement tests fees, and purchase of equipment and disposable lab supplies. In the final semester of study the student is required to pay fees for the application to take the NCLEX-RN and the application for licensure. Go to www.bon.state.tx.us for information on current fee structure.

Upon admission to the nursing program all students must submit evidence of the following: (1) current immunizations- MMR, hepatitis B series (3 injections), tetanus, diphtheria, pertussis, polio (2) TB screening (updated on a yearly basis) (3) American Heart Association Healthcare Provider CPR or Red Cross Professional CPR certification.

The student must also provide her/his own transportation to health care agencies. Driving distances will vary; clinical assignments will be based on availability of learning experiences. Due to travel distances it may be necessary for the student to stay overnight in order to participate in clinical experiences. The student is responsible to pay room and board if overnight stay is necessary.

THE BACHELOR OF SCIENCE DEGREE IN NURSING

	Semester Hours
University General Education Requirements	42

See page 79 for additional information about the Tarleton State University general education requirements. **Course descriptions begin on page 281.**

Courses Required for Major	
FCS 210	3
BIOL 219[1], BIOL 220[1], BIOL 307	12
CHEM 103 or CHEM 105	4
PSY 101, PSY 307	6
MATH 131	3
Approved Advanced Electives	3
Required Nursing Courses	
NUR 301, NUR 302, NUR 303, NUR 322, NUR 325, NUR 330, NUR 408, NUR 410, NUR 411, NUR 412, NUR 425, NUR 460	41
Generic Student Program Entry	
NUR 250, NUR 255, NUR 260, NUR 265, NUR 270, NUR 323	19
LVN Program Entry	
NUR 305, NUR 316	6

[1] Course may be counted toward general education requirement.

[2] Generic students may complete non-nursing course requirements while completing the preadmission course, NUR 250.

[3] The LVN is awarded 12 SCH of credit for past education upon successful completion of the transition semester.

Note: The typical curriculum for the Bachelor of Science Degree in Nursing requires (1) a minimum of 120 semester hours with 57 to 60 of the semester hours being nursing credits and (2) a minimum of 45 semester hour of advanced credit (300 level or above).

All students must complete all degree requirements with a grade of "C" or better including the university general education requirements and courses required for the major.