Pre-Professional Health Sciences Program List

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Welcome to the Pre-Professional Health Sciences Program at TTU!

This handbook is meant to be a resource for you during SOAR, UNPP 1020 and throughout your time as a TTU pre-professional health sciences student!

You may know what direction in the health professions that you want to go, or you may be exploring different health careers. To investigate different health professions, we recommend the following websites:

www.explorehealthcareers.org
www.tntech.edu/healthsciences

Helpful Tips for New Freshmen:

• Check your TTU email daily
• Make appointments with your advisors and with tutors using TechConnect
• Get involved, especially with the Chem Med Club
• Study every day for your classes
• Form study groups
• Visit Faculty/Advisor office hours
TIMELINE
For Pre-Professional Health Sciences Students

There are 3 essential areas that pre-professional students must address before applying to professional school:

1. Academic Excellence
2. Health Care Experience
3. Extra-Curricular, Service, and Leadership Activities

To prepare for admissions into a health sciences program, one should consult the following timeline during each stage of their undergraduate career:

FRESHMAN YEAR:

➢ Academic Excellence:

- Join the pre-health listserv for information from the pre-professional health sciences advisors.
- Begin the coursework for your area of health sciences interest.
- Begin thinking about majors that would lead to a Bachelor’s degree.
- Establish good study habits. Academics come first!
- Interact with the pre-professional advisors and guest speakers during UNPP 1020 in the fall.
- Get to know your professors. Sit in the front of class, ask questions, and go to office hours. You will need to get good, strong letters of recommendation for professional school.
- Get advised for your upcoming semester’s classes in a timely manner.
- READ! Extensive reading in both science and non-science areas will help to develop your vocabulary, speed, and comprehension.

➢ Health Care Experience:

- Gather information on all health-care professions. www.ExploreHealthCareers.org is a great resource.
- Consider health care-related experience such as volunteer work or job shadowing.
- The summer can be an excellent time to begin or continue to get meaningful health care experience. Volunteer, job shadow, or consider an EMT training course, etc.
- Keep a diary of your health profession and related activities.

➢ Extra-Curricular, Service, and Leadership Activities

- Begin attending Chem Med Club meetings on the 1st and 3rd Tuesdays of each month in FH 233 at 11 am. The club invites guest speakers from all different areas of the health sciences.
- Attend visits from health professional program admissions staff hosted by the pre-professional advisors. This is your chance to network with members of the admissions committees at the professional schools.
- Participate in activities that you enjoy and are meaningful to you. This can include clubs, sports, community service activities, hobbies, etc.
- Fine-tune your time management and interpersonal skills by getting involved and learning to balance your academic and non-academic activities.
SOPHOMORE YEAR:

➢ Academic Excellence:
  
  o Continue taking the pre-requisites for your health sciences program while deciding on a bachelor’s degree program.
  o Work on study habits and time-management skills that will allow your grades to improve even as courses get more challenging.
  o Research health professional programs to learn about specific requirements.
  o Continue to interact with the pre-professional advisors during Chem Med Club meetings, and advisement sessions. Continue to establish professional relationships with your professors.
  o Continue building professional relationships with your faculty as you will need good, strong letters of reference from them when you apply to professional school.
  o Begin to put together a resume if you don't have one already. Career Services can be a great resource for resume writing.
  o Begin to explore research opportunities, especially if MD/Ph.D. is an interest.
  o Continue to read! This will help you to prepare for the MCAT, PCAT, DAT, GRE, etc.

➢ Health Care Experience:
  
  o Continue to gain meaningful health care experience. Experiences that allow for direct patient contact tend to be most meaningful.
  o Investigate opportunities for health care programs in the summer and on breaks from school.
  o Think Quality over Quantity during the school year. Job shadow a local pharmacist or dental hygienist for a few afternoons (or more) during the semester.

➢ Extra-Curricular, Service, and Leadership Activities:
  
  o Continue attending Chem Med Club meetings and professional school visits.
  o Expand your involvement with student clubs and groups and community service or volunteer programs.
  o Regular participation in extra-curricular activities shows commitment, and these activities will help you develop good time management and interpersonal skills.
  o Take on a small leadership role within a club or group to increase your involvement.
JUNIOR YEAR:

➢ Academic Excellence:
  o Continue to excel in your academic coursework.
  o In the fall or spring, visit Foster Hall 205 to learn about the process to be interviewed and evaluated by the pre-health advisory committee.
  o Discuss letters of recommendation with faculty who know you well.
  o Prepare a study plan for your MCAT, PCAT, DAT, OAT, or GRE.
  o Plan to take the MCAT, PCAT, DAT, OAT, or GRE as early as the spring of junior year.
  o Draft, revise, and edit your personal statement.

➢ Health Care Experience:
  o Continue and expand your involvement in healthcare related activities. Professional schools are looking for students with a depth and breadth of experience in healthcare.
  o Seek out a part-time job in a healthcare setting.

➢ Extra-Curricular, Service, and Leadership Activities:
  o Continue attending Chem Med Club meetings and professional school visits.
  o Continue and expand your involvement with student groups and community service and volunteer programs.
  o Consider a larger leadership role within a group or organization.

SUMMER BETWEEN JUNIOR AND SENIOR YEAR:

  o Begin primary applications to professional schools. Most health professions have a common application online. Applications generally open in May, June, or July.
  o Perfect your personal statement.
  o Complete secondary applications and have letters of recommendation sent.

SENIOR YEAR:

  o Fine-tune your interviewing skills.
  o Go on professional school interviews.
  o Graduate!

Note: This general timeline is set up for students who plan to complete their Bachelor’s degree and matriculate directly to a health professional school the fall semester after they graduate from TTU. You may need to adjust your timeline if you plan to apply to professional school prior to completing your bachelor’s degree, generally after sophomore or junior year (normally for pharmacy, dental hygiene, medical technology, or health information management programs).
Pre-professional programs are designed to satisfy minimum requirements for admission to professional schools. Some students complete only these minimum course requirements prior to seeking admission to the professional school; many students enroll in degree programs such as biology, chemistry, engineering, psychology, or others, and also take courses to complete the minimum professional school requirements. Many courses satisfy requirements in both programs. Check the Undergraduate Catalog online for full details and curricula.

Professional school requirements may change from time to time. Check with specific schools and with your pre-professional advisor to stay up to date with specific requirements.

Application to health professional school is VERY competitive. Completion of the pre-requisite coursework alone DOES NOT guarantee admission to professional school.
PRE-MEDICINE

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- PSY 1030 – Introduction to Psychology Credit: 3.
- SOC 1010 - Introduction to Sociology Credit: 3.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.
- Elective Credit 3.

Total: 32

Sophomore Year

- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- MATH 3070 - Statistical Methods I Credit: 3.
- Electives (Humanities - 3 hours) Credit 10.

Total: 32

Junior Year

- CHEM 4610 (5610) - General Biochemistry Credit: 3.
- CHEM 4620 (5620) - General Biochemistry Credit: 3.
- Biology Elective Credit 4.
- Electives Credit 18.

Total: 28

Senior Year

- Complete Gen Ed Core Classes.
- Complete Bachelor’s Degree Requirements for selected major (i.e. Biology, Chemistry, etc.).
- A Minimum of 120 credits is required for Graduation.
PRE-PHARMACY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH 1530 - Introductory Statistics Credit: 3.
- MATH 1830 - Applied Calculus Credit: 3. or
- MATH 1910 - Calculus I Credit: 4.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 29-30

Sophomore Year

- BIOL 3230 - Health Science Microbiology Credit: 4.
- ECON 2010 - Principles of Microeconomics Credit: 3.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- Humanities/Fine Arts Elective Credit: 3.
- Social/Behavioral Science Elective Credit: 6.

Total: 31

Junior Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- Humanities/Fine Arts Elective Credit 3.
- Social/Behavioral Science Elective Credit 3.
- COMM 2025 - Fundamentals of Communication Credit: 3. or
- COMM 4430 (5430) - Advanced Interpersonal Communication Credit: 3.
- Elective Credit 12.

Total: 29

NOTE: The pre-pharmacy requirements at most pharmacy schools may be completed in two to three years. Many students elect to apply to pharmacy school after completing three years of prerequisite coursework in order to improve their science background, maturity and competitiveness. Others complete a bachelor’s degree before matriculating to pharmacy school. Students with an interest in chemistry may elect to follow the first three years of coursework towards the Applied Chemistry major (see pages 24-27) and earn a Bachelor of Science Degree with a major in Chemistry from TTU after completing their first year of coursework from an accredited pharmacy school.
PRE-DENTISTRY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH Credit: 6.\(^1\)
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.
- Electives Credit: 3.

Total: 32

Sophomore Year

- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- Electives (Humanities-3 hours) Credit 13.

Total: 32

Junior Year

- CHEM 4610 (5610) - General Biochemistry Credit: 3.
- CHEM 4620 (5620) - General Biochemistry Credit: 3.
- BIOL 3230 - Health Science Microbiology Credit: 4.
- Electives Credit 18.

Total: 28

Senior Year

- Complete Gen Ed Core Classes.
- Complete Bachelor’s Degree Requirements for selected major (i.e. Biology, Chemistry, etc.).
- A Minimum of 120 credits is required for Graduation.

Note:
\(^1\) A course in calculus and a course in statistics are recommended.
PRE-OPTOMETRY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH 1730 - Pre-Calculus Mathematics Credit: 5.
- MATH 1910 - Calculus I Credit: 4.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 32

Sophomore Year

- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- MATH 1530 - Introductory Statistics Credit: 3.
- Humanities/Fine Arts Elective Credit 3.
- Electives Credit 6.

Total: 31

Junior Year

- BIOL 3230 - Health Science Microbiology Credit: 4.
- Social Science Credit: 6.
- PSY 1030 - Introduction to Psychology Credit: 3.
- CHEM 4610 (5610) - General Biochemistry Credit: 3.
- General Education Core or Major Credit: 12.

Total: 28

Senior Year

- Complete Gen Ed Core Classes.
- Complete Bachelor’s Degree Requirements for selected major (i.e. Biology, Chemistry, etc.).
- A Minimum of 120 credits is required for Graduation.

Note: BIOL 2010 - Human Anatomy and Physiology I, BIOL 2020 - Human Anatomy and Physiology II, and BIOL 3140 - Cellular Biology are highly recommended at some optometry schools.
PRE-PHYSICIAN ASSISTANT

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH\(^1\) Credit 6.
- PSY 1030 – Introduction to Psychology Credit: 3.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 32

Sophomore Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- PSY 2130 - Life Span Developmental Psychology Credit: 3.
- Humanities/Fine Arts Elective Credit 3.
- General Education Core or Major Credit 6.

Total: 31

Junior Year

- BIOL 3230 - Health Science Microbiology Credit: 4.
- BIOL 3810 - General Genetics Credit: 4.
- CHEM 4610 (5610) - General Biochemistry Credit: 3.
- HEC 2220 - Medical Terminology for the Human Sciences Credit: 1. or
- HIT 1010 Medical Terminology Credit 3.
- COMM 2025 - Fundamentals of Communication Credit: 3.
- General Education Core or Major Credit 13-15.

Total: 30

Senior Year

- Complete Gen Ed Core Classes.
- Complete Bachelor’s Degree Requirements for selected major (i.e. Biology, Chemistry, etc.)
- A Minimum of 120 credits is required for Graduation.

Note:
\(^1\) A course in College Algebra (MATH 1130) or higher and a course in Statistics fulfills the math requirements at most PA schools.
PRE-PHYSICAL THERAPY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH 1130 - College Algebra Credit: 3. or
- MATH 1710 - Pre-calculus I Credit: 3.
- Humanities/Fine Arts Elective Credit 3.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 29

Sophomore Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- PSY 1030 – Introduction to Psychology Credit: 3.
- PSY 2130 - Life Span Developmental Psychology Credit: 3.
- Electives Credit 6.

Total: 31

Junior Year

- EXPW 4440 - Physiology of Exercise Credit: 3.
- MATH 1530 - Introductory Statistics Credit: 3. or
- PSY 3010 - Statistics and Experimental Design Credit: 3.
- Electives Credit 25.

Total: 31

Senior Year

- Complete Gen Ed Core Classes.
- Complete Bachelor’s Degree Requirements for selected major (i.e. Biology, Psychology, etc.).
- A Minimum of 120 credits is required for Graduation.
PRE-OCCUPATIONAL THERAPY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- Humanities/Fine Arts Electives Credit 6.
- PSY 1030 – Introduction to Psychology Credit: 3.
- SOC 1010 - Introduction to Sociology Credit: 3.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 31

Sophomore Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- PSY 2130 - Life Span Developmental Psychology Credit: 3.
- PSY 4300 (5300) - Adult Psychology Credit: 3.
- PSY 4160 (5160) - Abnormal Psychology Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3.
- Electives Credit 3.

Total: 30

Junior Year

- EXPW 4420 - Kinesiology Credit: 3.
- MATH 1530 - Introductory Statistics Credit: 3. or
- PSY 3010 - Statistics and Experimental Design Credit: 3.
- HEC 2220 - Medical Terminology for the Human Sciences Credit: 1. or
- HIT 1010 Medical Terminology Credit 3.
- ANTH 1100 - Introduction to Anthropology Credit: 3.
- Electives Credit 18-20.

Total: 30

Senior Year

- Complete Gen Ed Core Classes.
- Complete Bachelor’s Degree Requirements for selected major (i.e. Biology, Psychology, etc.).
- A Minimum of 120 credits is required for Graduation.
PRE-DENTAL HYGIENE

Freshman Year

- CHEM 1010 - Introductory Chemistry I Credit: 4. or
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1020 – Introductory Chemistry II Credit: 4. or
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- PSY 1030 - Introduction to Psychology Credit: 3.
- SOC 1010 - Introduction to Sociology Credit: 3.
- MATH 1130 - College Algebra Credit: 3.¹
- MATH 1530 - Introductory Statistics Credit: 3.¹
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 31

Sophomore Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- BIOL 3230 - Health Science Microbiology Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3.
- HEC 2020 - Nutrition for Health Sciences Credit: 3.
- HIT 1010 Medical Terminology Credit 3.
- Electives Credit 6.

Total: 30

NOTES:
¹ ETSU requires MATH 1530 - Introductory Statistics ; UTHSC requires MATH 1130 - College Algebra .

² For students intending to earn a Bachelor's degree before entering professional school, it is recommended that elective courses be taken from core requirements or a selected degree program. HIST 2010 - Early United States History and HIST 2020 - Modern United States History are required pre-requisites at some dental hygiene programs.
PRE-MEDICAL TECHNOLOGY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH 1130 - College Algebra Credit: 3.
- PSY 1030 – Introduction to Psychology Credit: 3.
- Humanities/Fine Arts Electives Credit: 3.
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 32

Sophomore Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 3230 - Health Science Microbiology. Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3.
- Electives Credit 7.

Total: 29

Junior Year

- BIOL 4040 (5040) – Immunology Credit: 3.
- Electives Credit: 27.

Total: 30

NOTES:
1 For students intending to earn a Bachelor's degree before entering professional school, it is recommended that elective courses be taken from core requirements or a selected degree program.

2 Not all Med Tech programs require a Junior year. Additional recommended courses for Junior year include CHEM 3410, CHEM 4610 (5610) or CHEM 4500, and CHEM 3420.
**PRE-HEALTH INFORMATION MANAGEMENT**

**Freshman Year**

- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH 1530 - Introductory Statistics Credit: 3.
- Social/Behavioral Science Electives Credit 6.
- Electives Credit 15.\(^1\)
- UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit: 1.

Total: 31

**Sophomore Year**

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3.
- DS 2810 - Computer Applications in Business Credit: 3.
- Electives Credit 14.\(^1\)

Total: 31

**Junior Year**

- BMGT 3510 - Management and Organization Behavior Credit: 3.
- BMGT 3630 - Human Resource Management Credit: 3.
- DS 3860 - Business Database Management Credit: 3.
- DS 4330 (5330) - Management Information Systems Analysis and Design Credit: 3.
- HIT 1010 Medical Terminology Credit 3.
- Electives Credit 15.\(^1\)

Total: 30

**NOTES**

\(^1\)Suggested electives include ACCT 2110, FIN 3210, LAW 3810 or LAW 4720, HIST 2010 and HIST 2020, or general education core requirements.

University of Tennessee Health Science Center (UTHSC, Memphis) offers a Masters in Health Informatics and Information Management online.
COMMON MAJORS

While choice of major is entirely up to the individual student, many pre-professional students choose to major in one of the following B.S. granting degree programs:

- Biology (Cellular and Molecular Biology Concentration)
- Biology (Health Sciences Concentration)
- Biology (Biology Concentration, Microbiology Option)
- Chemistry (Biochemistry Concentration)
- Chemistry (Applied, Health Sciences Concentration)
- Chemistry (Applied, Forensic Science Concentration)

Students should meet with the faculty advisor in the academic department of your intended major very early on in your college career.
BIOLOGY, CELLULAR & MOLECULAR

Freshman Year

- BIOL 1000 - Introduction to Biological Methods Credit: 1.
- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- BIOL 2110 - General Botany Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- MATH Credit 6. ¹

Total: 33

Sophomore Year

- HIST 2010 - Early United States History Credit: 3.
- HIST 2020 - Modern United States History Credit: 3.
- Humanities/Fine Arts Electives Credit 6.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- PC 2500 - Communicating in the Professions Credit: 3. or
- COMM 2025 – Fundamentals of Communication Credit: 3.
- MATH Credit 3. ¹

Total: 29

Junior Year

- BIOL 3120 - General Ecology Credit: 3. or
- BIOL 3130 - General Ecology Credit: 4.
- BIOL 3140 - Cellular Biology Credit: 4.
- BIOL 3200 - General Microbiology Credit: 4.
- BIOL 3810 - General Genetics Credit: 4.
- BIOL 3920 - Biological Communication Skills Credit: 3.
- Social/Behavioral Science Elective Credit 3.

Total: 29-30
Senior Year

- BIOL 4150 (5150) - Molecular Genetics Credit: 3.
- BIOL 4160 (5160) - Genetic Engineering Laboratory Credit: 2.
- BIOL 4320 (5320) - Plant Physiology Credit: 3.
- BIOL 4040 (5040) - Immunology Credit: 3. or
- BIOL 4060 (5060) - Hormones and Chemical Communication Credit: 3. or
- BIOL 4850 (5850) - Applied Microbiology Credit: 3.
- CHEM 4610 (5610) - General Biochemistry Credit: 3.
- CHEM 4620 (5620) - General Biochemistry Credit: 3.
- CHEM 4650 (5650) - General Biochemistry Laboratory Credit: 2.
- Social/Behavioral Science Elective Credit 3.
- Electives Credit 6-7.

Total: 28-29

Note:

1 Three math/statistics courses are required, one each from the following pairs of courses: either MATH 1130 or MATH 1710, either MATH 1530 or MATH 1830, and either MATH 3070 or BIOL 4220 (5220) /WF 4220 (5220).
BIOLOGY, HEALTH SCIENCES

Freshman Year

- BIOL 1000 - Introduction to Biological Methods Credit: 1.
- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- BIOL 2110 - General Botany Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- MATH Credit 6.  

Total: 33

Sophomore Year

- BIOL 2010 - Human Anatomy and Physiology I Credit: 4.
- BIOL 2020 - Human Anatomy and Physiology II Credit: 4.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- Humanities/Fine Arts Electives Credit 6.
- MATH Credit 3.  

Total: 28

Junior Year

- BIOL 3120 – General Ecology Credit: 3. or
- BIOL 3130 - General Ecology Credit: 4.
- BIOL 3140 - Cellular Biology Credit: 4.
- BIOL 3230 - Health Science Microbiology Credit: 4.
- BIOL 3810 - General Genetics Credit: 4.
- BIOL 3920 - Biological Communication Skills Credit: 3.
- PC 2500 - Communicating in the Professions Credit: 3. or
- COMM 2025 – Fundamentals of Communication Credit: 3.

Total: 29-30
Senior Year

- BIOL 4150 (5150) - Molecular Genetics Credit: 3.
- Biology Directed Electives Credit 6-8. ²
- HIST 2010 - Early United States History Credit: 3.
- HIST 2020 - Modern United States History Credit: 3.
- PSY 1030 - Introduction to Psychology Credit: 3.
- Social/Behavioral Science Elective Credit 3.
- Electives Credit 7-9.

Total: 29-30

Note:

¹ Three math/statistics courses are required, one each from the following pairs of courses: either MATH 1130 or MATH 1710, either MATH 1530 or MATH 1830, and either MATH 3070 or BIOL 4220 (5220) /WFS 4220 (5220).
BIOLOGY, BIOLOGY CONCENTRATION
MICROBIOLOGY OPTION

Freshman Year

- BIOL 1000 - Introduction to Biological Methods Credit: 1.
- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- BIOL 2110 - General Botany Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- MATH Credit: 6. ¹

Total: 33

Sophomore Year

- GEOL 1040 - Physical Geology Credit 4. and
- GEOL 1045 – Earth Environment, Resources and Society Credit: 4. or
- GEOL 1040 - Physical Geology Credit 4. and
- GEOL 2000 - Earth Evolution and Life History Credit: 3. or
- PHYS 2010 - Algebra-based Physics I Credit: 4. and
- HIST 2010 - Early United States History Credit: 3.
- HIST 2020 - Modern United States History Credit: 3.
- Humanities/Fine Arts Electives Credit: 6.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- MATH Credit: 3. ¹
- PC 2500 - Communicating in the Professions Credit: 3. or
- COMM 2025 - Fundamentals of Communication Credit: 3.

Total: 28-29
Junior Year

- BIOL 3120 - General Ecology Credit: 3. ² or
- BIOL 3130 - General Ecology Credit: 4.
- BIOL 3140 - Cellular Biology Credit: 4.
- BIOL 3200 - General Microbiology Credit: 4.
- BIOL 3810 - General Genetics Credit: 4.
- BIOL 3920 - Biological Communication Skills Credit: 3.
- CHEM 3005 - Elementary Organic Chemistry Credit: 4. (see additional note below)
- Social/Behavioral Sciences Electives Credit: 6.

Total: 29-30

Senior Year

- Approved Biology and Chemistry Courses Credit: 13-24. ³
- Electives Credit: 5-18.

Total: 29-30

Notes:

1. Three math/statistics courses are required, one each from the following pairs of courses: either MATH 1130 or MATH 1710, either MATH 1530 or MATH 1830, and either MATH 3070 or BIOL 4220 (5220) /WFS 4220 (5220).

² Students following the Microbiology option may choose between BIOL 3120 or BIOL 3130.

³ Microbiology Option: (18-24 hours)

1. BIOL 4130 (5130), BIOL 4150 (5150) BIOL 4750 (5750); and
2. CHEM 4610 (5610), CHEM 4620 (5620); and
3. Choose two courses from: BIOL 4000 (5000), BIOL 4040 (5040), BIOL 4120 (5120), BIOL 4140 (5140), BIOL 4160 (5160), BIOL 4780 (5780) or BIOL 4850 (5850).

or

1. BIOL 4130 (5130), BIOL 4150 (5150), BIOL 4750 (5750); and
2. CHEM 4500; and
3. Choose two courses from: BIOL 4000 (5000), BIOL 4040 (5040), BIOL 4120 (5120), BIOL 4140 (5140), BIOL 4160 (5160), BIOL 4780 (5780) or BIOL 4850 (5850).

Note regarding organic chemistry: Many health professional programs require CHEM 3010 and 3020 and not simply CHEM 3005. See a biology faculty advisor for information regarding your organic chemistry options.
BIOCHEMISTRY

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- MATH 1910 - Calculus I Credit: 4.
- Social/Behavioral Science Elective Credit 3.
- CHEM 1500 - First Year Interactions and Advisement Credit: 1.

Total: 30

Sophomore Year

- CHEM 3420 - Analytical Applications Credit: 3.
- BIOL 3140 - Cellular Biology Credit: 4.
- BIOL 3230 - Health Science Microbiology Credit: 4.
- Humanities/Fine Arts Electives Credit 6.

Total: 29

Junior Year

- CHEM 3500 - Elements of Physical Chemistry Credit: 3.
- BIOL 3810 - General Genetics Credit: 4.
- HIST 2010 - Early United States History Credit: 3.
- HIST 2020 - Modern United States History Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3, or
- PC 2500 - Communicating in the Professions Credit: 3.
- Humanities/Fine Arts Electives Credit 3.
- Social/Behavioral Science Elective Credit 3.

Total: 30
Senior Year

- CHEM 4610 (5610) - General Biochemistry Credit: 3.
- CHEM 4620 (5620) - General Biochemistry Credit: 3.
- CHEM 4650 (5650) - General Biochemistry Laboratory Credit: 2.
- CHEM 4910 - Chemistry Seminar Credit: 2.
- BIOL 4150 (5150) - Molecular Genetics Credit: 3.
- BIOL Elective Credit 3. ¹
- MATH 3070 - Statistical Methods I Credit: 3.
- Electives Credit 12.

Total: 31

Note:

¹ Choose from BIOL 4040 (5040) Immunology or BIOL 4060 (5060) Hormones and Chemical Communication.
APPLIED CHEMISTRY, HEALTH SCIENCES

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- MATH 1530 - Introductory Statistics Credit: 3.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- Humanities/Fine Arts Elective Credit: 3.
- CHEM 1500 - First Year Interactions and Advisement Credit: 1.

Total: 29

Sophomore Year

- CHEM 2010 - Introduction to Inorganic Chemistry Credit: 3.
- CHEM 3420 - Analytical Applications Credit: 3.
- MATH 1910 - Calculus I Credit: 4.
- Social/Behavioral Science Electives Credit: 6.
- Technical Requirements Credit: 3. ¹

Total: 31

Junior Year

- CHEM 3500 - Elements of Physical Chemistry Credit: 3.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- HIST 2010 - Early United States History Credit: 3.
- HIST 2020 - Modern United States History Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3. or
- PC 2500 - Communicating in the Professions Credit: 3.
- Technical Requirements Credit: 7. ¹

Total: 30
Senior Year

- CHEM 4910 - Chemistry Seminar Credit: 2.
- Advanced CHEM Courses Credit 9.  
- Humanities/Fine Arts Elective Credit 3.
- Technical Requirements Credit 3-5.  
- Electives Credit 11-12.

Total: 30

Note:

Health Science Chemistry:

1 Technical Requirements:  BIOL 2010 (Human Anatomy and Physiology I), BIOL 2020 (Human Anatomy and Physiology II), BIOL 3230 (Health Science Microbiology), plus 3 hours chosen from BIOL 3810 (General Genetics), BIOL 4040 (Immunology), BIOL 4060 (Hormones and Chemical Communication), and BIOL 4150 (Molecular Genetics).

2 Chemistry Requirements:  CHEM 4610 (5610) and CHEM 4620 (5620) plus 3 hours of advanced chemistry approved by the chemistry advisor.
APPLIED CHEMISTRY, FORENSIC SCIENCE

Freshman Year

- BIOL 1105 - Foundations of Biology Credit: 4.
- BIOL 1114 - General Zoology Credit: 4.
- CHEM 1110 - General Chemistry I Credit: 4.
- CHEM 1120 - General Chemistry II Credit: 4.
- MATH 1530 - Introductory Statistics Credit: 3.
- ENGL 1010 - English Composition I Credit: 3.
- ENGL 1020 - English Composition II Credit: 3.
- Humanities/Fine Arts Elective Credit 3.
- CHEM 1500 - First Year Interactions and Advisement Credit: 1.

Total: 29

Sophomore Year

- CHEM 2010 - Introduction to Inorganic Chemistry Credit: 3.
- CHEM 3420 - Analytical Applications Credit: 3.
- MATH 1910 - Calculus I Credit: 4.
- Social/Behavioral Science Electives Credit 6.
- Technical Requirements Credit 3. ¹

Total: 31

Junior Year

- CHEM 3500 - Elements of Physical Chemistry Credit: 3.
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
- HIST 2010 - Early United States History Credit: 3.
- HIST 2020 - Modern United States History Credit: 3.
- COMM 2025 – Fundamentals of Communication Credit: 3. or
- PC 2500 - Communicating in the Professions Credit: 3.
- Technical Requirements Credit 7. ¹

Total: 30
Senior Year

- CHEM 4910 - Chemistry Seminar Credit: 2.
- Advanced CHEM Courses Credit 9. ²
- Humanities/Fine Arts Elective Credit 3.
- Technical Requirements Credit 3-5. ¹
- Electives Credit 11-12.

Total: 30

Note:

¹ Forensic Chemistry:

¹ Technical Requirements:  BIOL 3330 (Entomology), BIOL 3810 (General Genetics), BIOL 4150 (Molecular Genetics), CJ 2660 (Criminology), CJ 4250 (Drugs and Behavioral Pharmacology).

² Chemistry Requirements:  CHEM 4410 (Forensic Chemistry), CHEM 4610 (General Biochemistry) and CHEM 4650 (General Biochemistry Laboratory).
# 41-Hour General Education Core

### Communication – 9 hours

**6 hours in English composition**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1010</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1020</td>
<td>English Composition II</td>
<td>3</td>
</tr>
</tbody>
</table>

**3 hours in English oral presentational communication**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 2025</td>
<td>Fundamentals of Communication</td>
<td>3</td>
</tr>
<tr>
<td>PC 2500</td>
<td>Communicating in the Professions</td>
<td>3</td>
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</table>

### Mathematics – 3 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>MATH 1010</td>
<td>Introduction to Contemporary Mathematical Ideas</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1130</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1420</td>
<td>Geometry Concepts for Teachers (ElEd only)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1530</td>
<td>Introductory Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1630</td>
<td>Finite Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1710</td>
<td>Pre-Calculus Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1720</td>
<td>Pre-Calculus Trigonometry</td>
<td>3</td>
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<tr>
<td>MATH 1730</td>
<td>Pre-Calculus Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>MATH 1830</td>
<td>Applied Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1910</td>
<td>Calculus I</td>
<td>4</td>
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### History – 6 hours

<table>
<thead>
<tr>
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<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>HIST 2010</td>
<td>Early United States History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2020</td>
<td>Modern United States History</td>
<td>3</td>
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</tbody>
</table>

### Humanities and/or Fine Arts – 9 hours

At least one course in literature, selected from those marked with an asterisk (*) must be included in the 9 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1030</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2130</td>
<td>Topics in American Literature</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2235</td>
<td>Topics in British Literature</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2330</td>
<td>Topics in World Literature</td>
<td>3</td>
</tr>
<tr>
<td>FLST 2520</td>
<td>Cultures and Peoples of North Africa</td>
<td>3</td>
</tr>
<tr>
<td>FREN 2510</td>
<td>French Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>GERM 2520</td>
<td>German Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2210</td>
<td>Early Western Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2220</td>
<td>Modern Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2310</td>
<td>Early World History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2320</td>
<td>Modern World History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 1310</td>
<td>Science and World Cultures</td>
<td>3</td>
</tr>
<tr>
<td>MUS 1030</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 1030</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>RELS 2010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 2510</td>
<td>Spanish Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 2550</td>
<td>Latin American Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>THEA 1030</td>
<td>Introduction to Theater</td>
<td>3</td>
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</table>
### Social/Behavioral Sciences – 6 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AGBE 2010</td>
<td>World Food and Society</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 1100</td>
<td>Introduction to Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2010</td>
<td>Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2020</td>
<td>Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>EXPW 2015</td>
<td>Concepts of Health and Wellness</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1012</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1130</td>
<td>Geography of Natural Hazards</td>
<td>3</td>
</tr>
<tr>
<td>POLS 1000</td>
<td>American Government</td>
<td>3</td>
</tr>
<tr>
<td>PSY 1030</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 1010</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>WGS 2010</td>
<td>Women and Gender Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

### Natural Sciences – 8 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ASTR 1010</td>
<td>Introduction to Modern Astronomy I</td>
<td>4</td>
</tr>
<tr>
<td>ASTR 1020</td>
<td>Introduction to Modern Astronomy II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1010</td>
<td>Introduction to Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1020</td>
<td>Introduction to Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1105</td>
<td>Foundations of Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1114</td>
<td>General Zoology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2110</td>
<td>General Botany</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1310</td>
<td>Concepts of Biology and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2010</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2020</td>
<td>Human Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1010</td>
<td>Introduction to Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1020</td>
<td>Introduction to Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1110</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1120</td>
<td>General Chemistry II</td>
<td>4</td>
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<tr>
<td>CHEM 1310</td>
<td>Concepts of Chemistry</td>
<td>3</td>
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<tr>
<td>GEOL 2100</td>
<td>Introduction to Meteorology</td>
<td>4</td>
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<tr>
<td>GEOL 1040</td>
<td>Physical Geology</td>
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</tr>
<tr>
<td>GEOL 1045</td>
<td>Earth Environment, Resources and Society</td>
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<td>GEOL 1070</td>
<td>Concepts of Geology</td>
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<tr>
<td>PHYS 1310</td>
<td>Concepts of Physics</td>
<td>3</td>
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<tr>
<td>PHYS 2010</td>
<td>Algebra-based Physics I</td>
<td>4</td>
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<tr>
<td>PHYS 2020</td>
<td>Algebra-based Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2110</td>
<td>Calculus-based Physics I (with lab)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2120</td>
<td>Calculus-based Physics II (with lab)</td>
<td>4</td>
</tr>
</tbody>
</table>
# MATH Assignment for STEM Students

<table>
<thead>
<tr>
<th>Test Scores</th>
<th>Allowed</th>
<th>Recommended</th>
<th>Alternate Testing Options for Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT Math</td>
<td>SAT Math</td>
<td>HS GPA Less than 3.0</td>
<td>HS GPA 3.0 to 4.0</td>
</tr>
<tr>
<td>Less than 19</td>
<td>Less than 460</td>
<td>MATH 1000</td>
<td>MATH 1000</td>
</tr>
<tr>
<td>19</td>
<td>460-470</td>
<td></td>
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</tr>
<tr>
<td>20</td>
<td>480-490</td>
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<tr>
<td>21</td>
<td>500-510</td>
<td></td>
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<tr>
<td>22</td>
<td>520-530</td>
<td>MATH 1710 and/or MATH 1720</td>
<td>MATH 1710 &amp; 1720</td>
</tr>
<tr>
<td>23</td>
<td>540-550</td>
<td></td>
<td></td>
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<tr>
<td>24</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>570-580</td>
<td>MATH 1730</td>
<td>1) MATH 1710 &amp; 1720 OR 1) MATH 1730 OR</td>
</tr>
<tr>
<td>26</td>
<td>590-600</td>
<td></td>
<td>2) MATH 1730 OR 2) MATH 1710 &amp; 1720</td>
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<tr>
<td>27</td>
<td>610-620</td>
<td>MATH 1910</td>
<td>MATH 1910</td>
</tr>
</tbody>
</table>

The ACCUPLACER Test is an ACT product that is administered at TTU by appointment. For more information, and to schedule an appointment please contact the Learning Support Program at 931-372-3476.

ACT does not provide a correlation between results from the ACCUPLACER test and an ACT math subscore. Every university independently determines how to use ACCUPLACER results. At TTU the ACCUPLACER can be used to satisfy ACT math subscore prerequisites for MATH 1710, MATH 1720, MATH 1730, and MATH 1910. The prerequisites for MATH 1710, 1720, 1730, and 1910 will be programmed in BANNER.
## TYPICAL FRESHMAN SCHEDULE

<table>
<thead>
<tr>
<th>FALL</th>
<th>Credits</th>
<th>SPRING</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1110</td>
<td>4</td>
<td>CHEM 1120</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1105</td>
<td>4</td>
<td>BIOL 1114</td>
<td>4</td>
</tr>
<tr>
<td>*ENGL 1010</td>
<td>3</td>
<td>*ENGL 1020</td>
<td>3</td>
</tr>
<tr>
<td>**Math (or Gen Ed Core)</td>
<td>3-4</td>
<td>**Math (or Gen Ed Core)</td>
<td>3-4</td>
</tr>
<tr>
<td>UNPP 1020</td>
<td>1</td>
<td>Elective/Gen Ed Core</td>
<td>1-3</td>
</tr>
<tr>
<td>Elective</td>
<td>0-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td>*<strong>TOTAL</strong></td>
<td>15-17</td>
</tr>
</tbody>
</table>

* If advanced credit (AP, dual enrollment, etc.) has been awarded for ENG 1010 and/or ENG 1020, courses should be selected from the Gen Ed Core list towards meeting the requirements for a B.S. degree.

** Regarding Math Courses: Students should take into consideration both pre-professional program requirements and B.S. major requirements when registering for math classes. Students should strongly consider taking a math course their first semester and continue taking math courses until their math requirements are fulfilled.

*** For lottery scholarship purposes, total credit load each semester should probably be at least 16 credit hours.
REGISTRATION BRAINSTORMING WORKSHEET
Eagle Online:  www.tntech.edu/eagleonline

Use the area below to list ideas about which classes you would like to take and to take notes.

<table>
<thead>
<tr>
<th>CRN #</th>
<th>Course</th>
<th>Number</th>
<th>Section</th>
<th>Days</th>
<th>Time</th>
<th>Cr Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lect. 80411</td>
<td>CHEM 1110</td>
<td>001</td>
<td>MWF</td>
<td>8-8:55 am</td>
<td>4</td>
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<tr>
<td>Lab   82241</td>
<td>CHEM 1110</td>
<td>125</td>
<td>R</td>
<td>12-12:55 pm</td>
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Notes:
# Scheduling Scratch Paper

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<tr>
<th>Last Name</th>
<th>First</th>
<th>Middle</th>
<th>Email</th>
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<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class Meeting Times</th>
<th>List Course (Ex. ENGL 1010) for each period</th>
</tr>
</thead>
<tbody>
<tr>
<td>MON</td>
<td>TUE</td>
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Below are descriptions for some common courses that most pre-professional students take. The entire TTU “Course Description” index is available at www.tntech.edu/catalog

**BIOL 1105 - Foundations of Biology** Lec. 3. Lab. 2. Credit 4.
A basic foundation in biological principles common to all organisms with an emphasis on molecules, cells and organelles, respiration, photosynthesis, metabolism and enzymatic function, genetics and inheritance, cellular reproduction, evolution, and speciation.

**BIOL 1114 - General Zoology (Formerly BIOL 1110, 1115)** Lec. 3. Lab. 2. Credit 4.
Prerequisite: BIOL 1105 is highly recommended. Introduction to the principles of zoology.

**BIOL 2010 - Human Anatomy and Physiology I** Lec. 3. Lab. 2. Credit 4.
Structure and function of the human body for nursing and other majors requiring a detailed examination of the topic. First course in a two course sequence. (See BIOL 2020).

**BIOL 2020 - Human Anatomy and Physiology II** Lec. 3. Lab. 2. Credit 4.
Prerequisite: BIOL 2010. Continuation of BIOL 2010.

**BIOL 3140 - Cellular Biology** Lec. 3. Lab. 2. Credit 4.
Prerequisite: BIOL 1114. An introduction to structure and function of cells.

**BIOL 3230 - Health Science Microbiology** Lec. 3. Lab. 3. Credit 4.
Prerequisite: Sophomore standing. Introduction to microbiology. Intended for students majoring in nursing or other pre-professional programs. Credit will not be given for both BIOL 3200 and BIOL 3230.

**BIOL 4040 (5040) – Immunology** Lec. 3. Credit 3.
Prerequisite: Junior standing. Introduction to basic principles of cellular and molecular immunology.

**CHEM 1010 - Introductory Chemistry I** Lec. 3. Lab. 3. Credit 4.
Prerequisite: CHEM 1010 is prerequisite to CHEM 1020. Overview of chemical principles and applications. Laboratories emphasize general principles of chemistry.

**CHEM 1020 - Introductory Chemistry II** Lec. 3. Lab. 3. Credit 4.
Prerequisite: CHEM 1010 is prerequisite to 1020. Overview of chemical principles and applications. Laboratories emphasize general principles of chemistry.

**CHEM 1110 - General Chemistry I** Lec. 3. Lab. 3. Credit 4.
Prerequisite: CHEM 1110 is prerequisite to CHEM 1120. Basic course in general chemistry for curricula requiring more than one year of chemistry. Laboratory includes qualitative analysis procedures.

**CHEM 1120 - General Chemistry II** Lec. 3. Lab. 3. Credit 4.
Prerequisite: CHEM 1110 is prerequisite to 1120. Basic course in general chemistry for curricula requiring more than one year of chemistry. Laboratory includes qualitative analysis procedures.

**CHEM 3010 - Organic Chemistry I** Lec. 3. Lab. 3. Credit 4.
Prerequisite: CHEM 1120 with a grade of C or better or a minimum grade of B in CHEM 1010 and CHEM 1020. Study of carbon-containing compounds using the functional group approach and an emphasis in simple mechanisms of aliphatic and aromatic compounds.
CHEM 3020 - Organic Chemistry II Lec. 3. Lab. 3. Credit 4.
Prerequisite: CHEM 3010 with a grade of C or better. Study of carbon-containing compounds using the functional group approach and an emphasis in simple mechanisms of aliphatic and aromatic compounds.

CHEM 4610 (5610) - General Biochemistry Lec. 3. Credit 3.
Prerequisite: CHEM 3005 or CHEM 3010. Chemistry of proteins, lipids, carbohydrates and nucleic acids. Includes study of pH, buffer system, and biological separation methods.

CHEM 4620 (5620) - General Biochemistry Lec. 3. Credit 3.
Prerequisite: CHEM 4610 (5610). Intermediary metabolism, bioenergetics, and biosynthesis.

COMM 2025 – Fundamentals of Communication Lec. 3. Credit 3.
Introduction to the communication process, interpersonal communication, group discussion, and public speaking. Students are required to prepare and deliver speeches.

ECON 2010 - Principles of Microeconomics Lec. 3. Credit 3.
Supply and demand, theory of demand, principles of production, pricing, and distribution. Output market structures, labor markets and issues, and international trade.

ENGL 1010 - English Composition I Lec. 3. Credit 3.
Introduces students to expressive, expository and persuasive writing. Assignments are based on personal experience and research. Student must earn a grade of C or better to pass.

ENGL 1020 - English Composition II Lec. 3. Credit 3.
Prerequisite: ENGL 1010. Builds on writing and research processes taught in ENGL 1010; emphasizes critical reading, critical thinking, and critical writing (persuasion) about a variety of written texts and other media. Student must earn a grade of C or better to pass.

ENGL 2130 - Topics in American Literature Lec. 3. Credit 3.
Prerequisite: ENGL 1020. Not for ENG or SEEN majors. Representative authors, periods, or themes from the colonial period to the present.

ENGL 2235 - Topics in British Literature Lec. 3. Credit 3.
Prerequisite: ENGL 1020. Not for ENG majors. Representative authors, periods, or themes from Old English to the present.

ENGL 2330 - Topics in World Literature Lec. 3. Credit 3.
Prerequisite: ENGL 1020. Representative authors, periods, or themes from various world literary cultures.

HEC 2020 - Nutrition for Health Sciences Lec. 3. Credit 3.
Prerequisite: Completion of 15 credit hours. Principles of nutrition. Emphasis upon the function, food sources, recommended intake and assimilation of each of the six nutrient classes. HEC 1030 cannot be substituted for HEC 2020.

HEC 2220 - Medical Terminology for the Human Sciences Credit 1.
Prerequisite: Anatomy & Physiology course. This course provides students with an understanding of the terminology used in health care and wellness programs.

MATH 1130 - College Algebra Lec. 3. Credit 3.
Review of algebra and coordinate geometry; functions; polynomial, rational, exponential, and logarithmic functions; systems of equations; binomial formula; counting (multiplication principle, permutations, and
combinations); and conics. Credit towards graduation will not be given for MATH 1130 and MATH 1710 or for MATH 1130 and MATH 1730.

**MATH 1530 - Introductory Statistics** Lec. 3. Credit 3.
Descriptive statistics including measures of central location and variation, frequency distributions, histograms, and frequency polygons. Probability relating to elementary sample spaces, events, conditional probability, discrete and continuous type random variables, mathematical expectation, and the normal probability. Inferential statistics relating to the confidence intervals and hypothesis test related to the mean and proportion.

**MATH 1710 - Pre-calculus I** Lec. 3. Credit 3.
Review of algebra; relations and functions and their graphs, including polynomial and rational functions; conic sections; inequalities, arithmetic, and geometric sequences and series. Credit will not be given for both MATH 1710 and MATH 1730.

**MATH 1720 - Pre-calculus Trigonometry** Lec. 3. Credit 3.
Circular functions and radian measure, graphs of the trigonometric functions, trigonometric identities, and equations, the inverse trigonometric functions, polar coordinates. Applications involving triangles, vectors in the plane, and complex numbers. Credit will not be given for both MATH 1720 and MATH 1730.

**MATH 1730 - Pre-Calculus Mathematics** Lec. 5. Credit 5.
Prerequisite: Two years of high school algebra, one year of high school geometry, and 12 weeks of trigonometry. Review of algebra and trigonometry; relations and functions and their graphs, including polynomial and rational functions; conic sections; inequalities; polar coordinates; complex numbers; and advanced topics in algebra. Credit cannot be given for both MATH 1730 and any of MATH 1710 and 1720.

**MATH 1830 - Applied Calculus** Lec. 3. Credit 3.
Prerequisite: ACT mathematics score of 25 or above and three years of high school mathematics, including algebra and geometry; or, special permission of the Mathematics Department; or, C or better in MATH 1130 or MATH 1710 or equivalent. A survey of limits, continuity, and the differential and integral calculus with applications in business, economics and the life sciences.

**MATH 1910 - Calculus I** Lec. 4. Credit 4.
Prerequisite: ACT mathematics score of 27 or above and four years of high school mathematics, including algebra, geometry, trigonometry, and advanced or pre-calculus mathematics, or special permission of the Mathematics Department; or C or better in MATH 1730; or C or better in MATH 1720 and MATH 1710; or equivalent. Limits, continuity, and derivatives of functions of one variable. Applications of differentiation and introduction to the definite integral.

**MATH 3070 - Statistical Methods I** Lec. 3. Credit 3.
Prerequisite: Recommended C or better in MATH 1130. Introduction to parametric statistical methods with some non-parametric alternatives, sampling, probability, Type I and Type II error, sample size estimation, confidence interval estimation, test of hypotheses using normal, Student’s t, Snedecor’s F, Chi-square and the binomial distributions, linear regression, analysis of variance, and data analysis utilizing statistical software.

**MATH 3080 - Statistical Methods II** Lec. 3. Credit 3.
Prerequisite: C or better in MATH 3070. Introduction to parametric statistical methods with some non-parametric alternatives, sampling, probability, Type I and Type II error, sample size estimation, confidence interval estimation, test of hypotheses using normal, Student’s t, Snedecor’s F, Chi-square and the binomial distributions, linear regression, analysis of variance, and data analysis utilizing statistical software.
PC 2500 - Communicating in the Professions Lec. 3. Credit 3.
Prerequisite: ENGL 1020 or concurrent enrollment in ENGL 1020. Overview of skills and principles related to oral communications in various professions.

PHYS 2010 - Algebra-based Physics I Lec. 3. Lab. 3. Credit 4.
Prerequisite: Background knowledge of high school algebra and geometry. Basic laws of classical mechanics, waves and heat with elementary applications to familiar phenomena. A student may not earn credit in both PHYS 2010 and PHYS 2110 or in both PHYS 2020 and PHYS 2120. Credit will not be given for both PHYS 1310 and any of the above courses.

PHYS 2020 - Algebra-based Physics II Lec. 3. Lab. 3. Credit 4.
Prerequisite: PHYS 2010. Basic laws of electromagnetism and light with elementary applications and brief introduction to modern physics. A student may not earn credit in both PHYS 2010 and PHYS 2110 or in both PHYS 2020 and PHYS 2120. Credit will not be given for both PHYS 1310 and any of the above courses.

PSY 1030 – Introduction to Psychology Lec. 3. Credit 3.
Introduction to methods and findings of contemporary psychology. Emphasis on psychological basis for understanding human behavior. Consideration of maturation, learning, thinking, motivation, emotion, sensation, perception, and personality.

PSY 2130 – Life Span Developmental Psychology Lec. 3. Credit 3.
Developmental aspects of psychological functioning from the prenatal period to adulthood with emphasis on individual differences.

PSY 3010 - Statistics and Experimental Design Lec. 2. Lab. 2. Credit 3.
Prerequisite: PSY 2010. Fundamental statistics for the behavioral sciences, descriptive uses, probability, one-way, factorial designs, repeated measures and split-plot designs, bivariate correlation and regression, and non-parametrics.

PSY 4160 (5160) - Abnormal Psychology Lec. 3. Credit 3.
Prerequisite: PSY 2010. Nature of abnormal behavior, etiology, symptomatology and treatment. Students enrolled in the 5000-level course will be required to complete additional work as stated in the syllabus.

SOC 1010 - Introduction to Sociology Lec. 3. Credit 3.
Fundamental concepts and basic principles underlying human social relations.

UNPP 1020 - University Pre-Professional, First-Year Interactions and Advisement Credit 1.
This course engages the student in meaningful classroom and out-of-classroom activities. This is intended for pre-professional health science students. It emphasizes information, activities, and requirements important to becoming competitive in a professional school application pool.

UNPP 2020 - Special Topics Lec. 1-3. Credit 1-3.
Lower Division level study in a specific topic not commonly found in a discipline on campus, not to include work experience. May be repeated if topic is different. No more than a combined total of 9 hours of special topics may be taken.

UNPP 3020 - Special Topics Lec. 1-3. Credit 1-3.
Upper Division level study in a specific topic not commonly found in a discipline on campus, not to include work experience. May be repeated if topic is different. No more than a combined total of 9 hours of special topics may be taken.
Information Release Authorization

Student’s Full Name (Please Print) _____________________________________________

Student ID (T #) ______________________

I give my TTU Pre-Professional Health Science advisors; Ann Marie Carrick, Thomas Turner, Janet Coonce, and/or other pre-health advisor, permission to release any information regarding my academic record to the following people:

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I also give my above advisor permission to release my academic information in the form of recommendation or reference letters for the purpose of applications to employment, professional schools, or post-graduate education.

I understand that the above Release Authorization pertains to all periods of enrollment. I further understand that I may void this authorization at any time in writing by fax or mail.

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Student Signature                          Date

Photo/Video Image Release Authorization

I hereby give the Pre-Professional Health Sciences Program of TTU permission to use my photo/video for promotional purposes as they see fit. I understand that I will not be compensated for allowing the Program to use my name and likeness.

I understand that the above Release Authorization pertains to all periods of enrollment. I further understand that I may void this authorization at any time in writing by fax or mail.

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Student Signature                          Date