



PRE-MEDICINE

COLLEGE OF ARTS & SCIENCES

COLUMBIA HALL, ROOM 1000
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GRAND FORKS, ND 58202-8038

Health Sciences Advisors:

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It is our goal at UND to prepare students for any medical school in the country. Our undergraduates have been accepted at over 40 medical schools in the United States, Canada and England. Seats in medical school entering classes are limited – all together less than 21,000 seats are available across the country each year. The national ratio of qualified applicants per available seat is approximately 3:1. Regionally, however, the ratio is closer to 5:1. Getting accepted into any medical school is done through a highly competitive, two stage application process. It is extremely important that you are well prepared and able to present the best possible application to medical schools when you apply - good planning is key!

The Pre-Medicine Program* is not a major or degree granting program at UND. In order to graduate with a degree from UND, you will need to:

- Choose a **Major** and complete the specific requirements determined by the department responsible for that major
- Complete the **Essential Studies Requirements**
- Complete 125 semester credits (36 of which must be upper divisional credits)

You will be assigned two advisors while pursuing your degree and the Pre-Medicine Program at UND:

- A major advisor (from your major department) to help with the planning of your major curriculum
- The Health Sciences Advisor (from the College of Arts & Sciences) to help with all aspects of medical school preparation

Joining the Pre-Medicine Program is easy!:

1. Incoming freshmen students should plan to attend Summer Orientation - you can declare Pre-Med at that time
2. Current or transfer students can declare Pre-Med by stopping by the A&S main office or by calling us at 701-777-2749

Staying in the Pre-Medicine Program is hard!:

1. *Incoming Freshmen* must:
 - Attend all freshmen group advising meetings during the fall semester
 - Attend one freshmen group advising meeting during the spring semester
 - Complete the following courses, with a C grade or better, before the start of sophomore year:
 - Bio 150-151, with labs
 - Math 103 (may test out of this with an ACT Math score of 26, or appropriate Math placement test score)
 - Chem 121-122, with labs
 - Maintain a cumulative GPA of 3.0 or higher during freshman year
2. *Transfer students, or current students switching to Pre-Medicine after freshman year*, must:
 - If not already completed at UND or transferred in, complete the following courses with a C grade or better:
 - Bio 150-151, with labs
 - Math 103
 - Chem 121-122, with labs
 - Have a cumulative GPA of 3.0 or higher
3. *All continuing Pre-Medicine students* must:
 - Take Pre-Medicine courses as advised
 - Prepare for and take the MCAT
 - Keep cumulative GPA and science GPA competitive

*If you are currently a **non-UND undergraduate student** (attending and planning to graduate from another undergraduate institution), and would like information specifically about the UND School of Medicine and Health Sciences, you should:

- contact the UND SMHS Office of Admissions and Student Affairs: 701-777-4221
- contact the UND SMHS INMED Program Office (for Native American students only): 701-777-3037

Medical schools consider the following when reviewing applications:

1. Academics

a. Undergraduate Preparation

Admission into medical school typically requires completion of a Bachelor's degree or at least 90 credits from an accredited college or university. All medical schools have specific content or course prerequisites which are included in the UND Pre-Med Program. UND accepts AP and post-secondary transfer credits toward the completion of a bachelor's degree in accordance with the NDUS policies of [General Education Requirement Transfer Agreement](#) (GERTA) and [Common Course Numbering](#) (CCN). UND also has numerous articulation agreements and course equivalencies with other academic institutions. You should, however, check with the medical schools on your wish list regarding the post-UND implications of any AP, IB, CIS, CLEP, on-line, distance learning or community college work you plan to complete prior to your undergraduate matriculation.

b. Major

Medical schools do not require any particular major. Pre-Medicine students have completed such majors as Anthropology, Athletic Training, Biology, Business, Chemistry, Classical Studies, Communication, Criminal Justice, Dietetics, Engineering, Entrepreneurship, Foreign Language, Forensic Science, History, Honors, Interdisciplinary Studies, Kinesiology, Math, Music, Nutrition, OSEH, Philosophy, Political Science, Psychology, RHS, Sociology, Theatre Arts, and Visual Arts.

The choice for a major is entirely up to you! You should pick something you are good at, or enjoy studying, or fits your "plan B" if you don't end up going to medical school. A list of each major and degree offered at UND may be found at: <http://und.edu/academics/registrar/fields-of-study.cfm>. Click on a particular major to see what you will be studying, as well as opportunities and careers associated with that major. For specific requirements and course descriptions, click on the [Academics – Check out the courses you'll take](#) link on the right side of each major page. Four year plans (i.e., schedule of courses) for each degree are listed by college and are posted online at: <http://und-public.courseleaf.com/4yearplan/>.

The combination of the Pre-Medicine Program with a major in the College of Arts and Sciences can usually be finished in 4 years if both major and Pre-Med are started freshmen year. The combination of the Pre-Medicine program with a major in Athletic Training, Aviation, Dietetics, Engineering, Education, Nursing, Nutrition or Medical Laboratory Science will take longer. Because these majors include busy curricula and/or practicums, in most cases if you plan to combine one of them with Pre-Medicine, you will need at least 5 years of undergraduate studies to do so.

c. GPA

Since medical school curriculum is considerably more challenging than any undergraduate curricula, you need to leave no doubt of your academic ability by excelling at the undergraduate level. Average cumulative GPA of recent regional medical school matriculants: 3.70 - 3.80.

2. MCAT

a. Timing

This rigorous, full day exam is required by all medical schools. Students planning to finish their undergraduate degrees in 4 years typically take the MCAT in May or June after their 3rd year (junior year) of college. While retakes are allowed, it is best to "do it right the first time".

b. Preparation

Since considerable time (30+ hours/week) needs to go into MCAT preparation, UND students are encouraged to take a lighter load (12 credits) during the spring semester of their junior year to give them room for reviewing and practice testing. UND offers an optional MCAT Review Course every spring facilitated through Kaplan. This course is billed separately and does not count for credit at UND.

c. Scores

A new MCAT and scoring scale debuted in 2015. The national average MCAT composite score for medical school matriculants on the old scale was 32 (representing the 84th – 87th percentile range). On the new scale, the 84th -87th percentiles fall between 507 and 512.

3. Life Experiences

- a. Real World - Direct Patient Care Experience => 300-500 hours
 - Medical schools expect you to spend considerable time working in health care. You need to get a job in which you give direct medical care to patients, have a chance to observe doctors and other health care team members, and have a supervisor observing you (most medical schools require a letter of recommendation from a health care work supervisor).
 - You may need to combine several jobs to get the experience and understanding of medicine you need. Work settings can include hospital, rehab, clinic, group care home (nursing, disabled children or adults, Alzheimer's unit, VA, etc.), hospice, home health, support services, phlebotomy, EMS, etc.
- b. Shadowing => 20-40 hours
 - The majority of hours need to be with basic care doctors: family medicine, internal medicine, pediatrics
 - A few of the hours can be with specialists
 - Be sure to include both rural and city experiences
- c. Community Service => These activities will set you apart!
 - Do things that you love, have a passion for, demonstrate your desire to serve others and give back, show your love of learning, let your leadership skills shine, etc.
 - These volunteer activities/paid jobs include, but are not limited to:
 - Lifeguards, first responders
 - Coaching/teaching sports (for park boards, travelling leagues, Special Olympics, etc.)
 - Camp counseling (church camps, day camps, medical camps, music camps, etc.)
 - Big Brother/Big Sister, Meals on Wheels, Relay for Life, etc.
 - Volunteering at your local city mission, free clinic, humane society, etc.
 - College organization participation or leadership (clubs, honor societies, sororities/fraternities, etc.)
 - College tutoring or TA positions
 - Medical missions trips (through college organizations, national organizations, or local churches)
 - Church work/sponsored activities (Sunday school teacher, youth worker, mission trips, etc.)
 - American Red Cross, Peace Corps
- d. Research => expected of students planning to attend top tier medical schools
 - UND has numerous opportunities for doing undergraduate basic science research during summer breaks or the school year – you may apply for positions that either pay or give you college credit
 - Regional hospitals, labs, companies may offer summer opportunities
 - National labs (the NIH and the CDC) have some summer positions for college students
- e. Keep a log of all hours

Although formal documentation is not needed, you should keep a simple personal log for all experiences/work in a notebook – be sure to include dates, times, activities, impressions, and note any meaningful patients or experiences. You will also need to provide contact information for someone who witnessed you in each experience or circumstance, so make note of that as well!

4. Letters of Recommendation

- a. You will need 3-4 letters of recommendation or evaluation for most medical schools.
- b. Letters need to address the personal attributes and academic abilities that make you a good fit for medical school and the profession of medicine.
- c. Authors will have to include professors and health care work supervisors who know you very well.

5. Legal Record

- a. Keep legal records clean. All minors and felonies will need to be disclosed on applications.
- b. Keep university records clean. Any institutional actions for code of student conduct violations (behavioral, academic, legal, etc.) will need to be disclosed on applications.
- c. Keep personal social media sites clean (Facebook, Twitter, etc.). Be sure to demonstrate integrity, maturity, wholesomeness and good taste in all postings (verbal, photos, pictures, etc.).

6. Home State Residency

In general, medical schools consider your home state of residency to be where you graduated high school and/or where your parent(s) currently live. You do not become a resident of a state by just attending college there!

Courses included in the **UND Pre-Medicine Program** fall into one (or more) of three categories. These categories are:

1. Requirements for most medical schools
2. Good preparation for the MCAT (as recommended by AAMC and former UND undergraduates)
3. Good, additional elective preparation for med schools (as recommended by current medical students)

The checklist below will help you keep track of your progress in the Pre-Medicine Program:

UND Courses required by most medical schools (all but English and Math are needed for MCAT preparation):

- | | |
|--|--|
| <input type="checkbox"/> Biol 150, 150L General Biology I | <input type="checkbox"/> Math (choose one) |
| <input type="checkbox"/> Biol 151, 151L General Biology II | <input type="checkbox"/> Math 146 Applied Calculus |
| | <input type="checkbox"/> Math 165 Calculus I |
| <input type="checkbox"/> Chem 121, 121L General Chemistry I | <input type="checkbox"/> Math 165-166 Calculus I and II |
| <input type="checkbox"/> Chem 122, 122L General Chemistry II | <input type="checkbox"/> AP credit for Calculus |
| | |
| <input type="checkbox"/> Chem 341, 341L Organic Chemistry I | <input type="checkbox"/> A Statistics course (choose one) |
| <input type="checkbox"/> Chem 342, 342L Organic Chemistry II | <input type="checkbox"/> Psyc 241 Psychological Statistics |
| | <input type="checkbox"/> Soc 326 Sociological Statistics |
| <input type="checkbox"/> BMB 301 Biochemistry | |
| | <input type="checkbox"/> Psyc 111 Introduction to Psychology |
| <input type="checkbox"/> Phys 211, 211L College Physics I | |
| <input type="checkbox"/> Phys 212, 212L College Physics II | <input type="checkbox"/> Engl 110 Composition I |
| | <input type="checkbox"/> Engl 130 Composition II |
| | |
| | <input type="checkbox"/> An upper level writing intensive humanities/social science course is required by MN med schools – see Health Sciences Advisor for suggestions |

Additional UND Courses needed/recommended for MCAT preparation:

- | | |
|---|---|
| <input type="checkbox"/> Biol 315 Genetics | <input type="checkbox"/> Psych 250 Developmental Psychology |
| <input type="checkbox"/> Biol 315R Genetics Recitation | |
| | <input type="checkbox"/> Psych 270 Abnormal Psychology |
| <input type="checkbox"/> Biol 341 Cell Biology | <input type="checkbox"/> Soc 110 Introduction to Sociology |
| | |
| <input type="checkbox"/> A Physiology course (choose one) | |
| <input type="checkbox"/> Biol 442 Physio of Organs/Systems (for Bio majors) | |
| <input type="checkbox"/> PPT 301 Human Physiology (for other majors) | |

UND electives good for medical school preparation (take as many as desired – all are optional):

- | | |
|---|--|
| <input type="checkbox"/> Anat 204, 204L Anatomy for Paramed Personnel | <input type="checkbox"/> Bio 420 Neuroscience |
| <input type="checkbox"/> Bio 369, 369L Histology | <input type="checkbox"/> MBio 302 General Microbiology |
| <input type="checkbox"/> Bio 390 Endocrinology | <input type="checkbox"/> MBio 328 Introduction to Immunology |
| <input type="checkbox"/> Bio 415 Genomics | <input type="checkbox"/> Nutr 240 Fundamentals of Nutrition |

Your course schedule at UND will vary depending on your major. Ultimately, all students, regardless of major, will be able to take the courses covering the content they need for the MCAT and medical school. The chart below shows complete major and Pre-Medicine **science and math** course schedules for both **Biology** and **Chem/Biochem** majors. For students pursuing **other majors**, only the **science and math** Pre-Medicine courses are listed so they will need to “pencil in” their major requirements as well. Also, all UND students will need to add any additional major requirements, Essential Studies requirements, and other electives to each semester in the schedules below as needed or desired:

	Freshman	Sophomore	Junior	Senior
Fall	Bio majors: <ul style="list-style-type: none"> Bio 120 Bio 150, 150L Chem 121, 121L Math 103 	Bio majors: <ul style="list-style-type: none"> Chem 341, 341L Bio 315 (Genetics) Bio 315R (Genetics Recitation) Bio 332 (Ecology) 	Bio majors: <ul style="list-style-type: none"> Physics 211, 211L Bio 442, 442L Chem 333, 333L (for minor) ? 	Bio majors: <ul style="list-style-type: none"> Bio 480 Bio requirement** Anat 204, 204L or Other Bio requirement**
	Chem/Biochem majors: <ul style="list-style-type: none"> Chem 101 Chem 121, 121L Bio 150, 150L Math 103 	Chem/Biochem majors: <ul style="list-style-type: none"> Chem 341, 341L Chem 361 Chem 333, 333L Physics 211, 211L 	Chem/Biochem majors: <ul style="list-style-type: none"> Chem 466 Bio 315, 315R Bio 442 (do not take 442L) 	Chem/Biochem majors: <ul style="list-style-type: none"> BMB 401, 403 Chem 492 or 495? Anat 204, 204L or Other Bio elective**
	Other majors: <ul style="list-style-type: none"> Bio 150, 150L Chem 121, 121L Math 103 	Other majors: <ul style="list-style-type: none"> Chem 341, 341L Bio 315, 315R Your major requirements? 	Other majors: <ul style="list-style-type: none"> Physics 211, 211L Bio 442 (do not take 442L) or PPT 301 Chem 333, 333L (for minor) ? Your major requirements? 	Other majors: <ul style="list-style-type: none"> Anat 204, 204L or Other Bio elective** Your major requirements?
	Everyone: Courses from Group 1*	Everyone: Courses from Group 1 or 2*	Everyone: Courses from Group 2 or 3*	Everyone: Courses from Group 2, 3 or 4* 2^o Med School Apps Due <i>(Submit to schools ASAP)</i> Interviews Begin <i>(Usually run October-February)</i>
Spr	Bio majors: <ul style="list-style-type: none"> Bio 151, 151L Chem 122, 122L Math 146 	Bio majors : <ul style="list-style-type: none"> Chem 342, 342L Bio 341, 341L (Cell Bio) Bio 312 (Evolution) 	Bio majors: <ul style="list-style-type: none"> Physics 212, 212L BMB 301 	Bio majors: <ul style="list-style-type: none"> Bio requirement** Bio requirement**
	Chem/Biochem majors: <ul style="list-style-type: none"> Bio 151, 151L Chem 122, 122L Math 146 	Chem/Biochem majors: <ul style="list-style-type: none"> Chem 342, 342L Chem 362 Physics 212, 212L 	Chem/Biochem majors: <ul style="list-style-type: none"> Chem 467 BMB 301 Bio 341 	Chem/Biochem majors: <ul style="list-style-type: none"> Chem 492 or 495? Bio elective**
	Other majors: <ul style="list-style-type: none"> Bio 151, 151L Chem 122, 122L Math 146 	Other majors: <ul style="list-style-type: none"> Chem 342, 342L Bio 341 Anat 204, 204L? Your major requirements? 	Other majors: <ul style="list-style-type: none"> Physics 212, 212L BMB 301 Your major requirements? 	Other majors: <ul style="list-style-type: none"> Bio elective(s)** Your major requirements?
	Everyone: Courses from Group 1*	Everyone: Courses from Group 1 or 2*	Everyone: Courses from Group 2 or 3* <i>Take a lighter credit load (12 credits) For MCAT prep or MCAT prep course</i>	Everyone: Courses from Group 2, 3 or 4*
Sum	Bio 341 is offered at UND during the summer – to help lighten their load during the regular school year, students may wish to do it after freshman or sophomore year (once Bio 150-151 and Chem 121-122 are completed)		WICHE Forms - MT, WY res only <i>(Complete over Spring Break)</i> MCAT (1st one by June 15th) 1^o Med School Apps Due <i>(Submit to AMCAS by June 30th)</i>	

* Courses in Group 1 are **required** for all majors. Courses from Groups 2, 3 and 4 are **options for Bio requirements/electives** or other **electives**.

Group 1: Eng 110 or 130, Psych 111, Psych 250, Psych 270, Soc 110, Comm 110, a Stats class (Psych 241 or Soc 326); additionally, the Chem/Biochem major also requires a level 2 proficiency in a Foreign Language (i.e., Span 101 and 102)

Group 2: Med 205, Nutr 240

**Group 3 Fall courses: Bio 378, Bio 410, Bio 364+L, Chem 333;

**Group 3 Spring courses: Mbio 302

**Group 4 Fall courses: Bio 390, Bio 420, Bio 460, Mbio 328;

**Group 4 Spring courses: Bio 369+L, Bio 415