

# BIOLOGY MAJOR — Pre-Medical Option (Physician) 2021-22

The Biology major Pre-Medicine option is designed to allow students interested in medicine, pharmacy, physician assistant and some other professional programs to optimally meet the requirement for their professional goal in the context of their Biology major. **This document outlines the requirements for students interested in becoming a physician** (see the other option documents for optometry, pharmacy, physician assistant and dentistry). The listed courses will meet the prerequisites for most AAMC and AACOM accredited medical schools in the U.S. and abroad. Students should always consult the requirements of all schools to which they plan to apply, and many medical schools will not accept online prerequisite courses (particularly those with online labs) or prerequisite courses taken during study abroad.

A 3.0 GPA is required to complete the Pre-Medical option. Courses used to satisfy option requirements also satisfy the Biology and Society, Organismal Biology, Physiology, Writing Intensive Course (WIC), Physics or Computer Science and Quantitative Applications and Experiential Learning or Integrative Biology Elective requirements in the Biology major. The option includes two physiology tracks: a comparative physiology track which provides a deeper physiology background for pre-medical students who take anatomy and physiology in medical school, and a human anatomy and physiology track which is generally for pre-pharmacy, pre-physician assistant and other students that need this series as a prerequisite for professional school. **Previous versions of this option are different and are tracked in MyDegrees. All courses and prerequisites are subject to change, and the listing of terms offered is based on projected Corvallis campus offerings.**

## Core Coursework:

Course	Pre(Co)requisites	Term	Credits
BI 109 Pre-Medical Orientation		SP	1
PHAR 210 Terminology of the Health Sciences		F, SP	2
PSY 201 <b>AND</b> PSY 202 General Psychology		F, W, SP, SU	4,4
SOC 204 Introduction to Sociology		F, W, SP, SU	3
PHL 205 Ethics <b>OR</b> PHL/REL 444 Biomedical Ethics	Sophomore standing for PHL/REL 444	F, W, SP, SU	4
PH 201, PH 202, PH 203 General Physics	MTH 112 (C-)	F, W, SP, SU (in order)	5,5,5

## Writing Intensive Course (Select one course from the following):

BI 319 Theory, Practice and Discourse in the Life Sciences	BI 221, 222, 223 (C-); ST 351	F, W, SP	3
MB 385 Emerging Infectious Diseases & Epidemics	BI 221, 222, 223	W	3

## Medicine, Health and Society (Select one course from the following):

ANTH 352 Anthropology, Health, and the Environment		F, W, SP (Ecampus only)	3
ANTH 383 Introduction to Medical Anthropology		F, W, SP (Ecampus only)	3
BB 220 Cancer: Society's Malignant Shadow		W, SP	
BB 332 Molecular Medicine	BI 221	F	3
BI 420 Viruses in Modern Society	BI 311 or BB 314	Alternate W	3
H 210 Introduction to the Health Care System		F, W, SP	3
H 225 Social and Individual Health Determinants		F, W, SP	4
H 312 HIV/AIDS and STI's in Modern Society		F, W, SP	3
H 333 Global Public Health		F, W, SP (Ecampus only)	3
HSTS 417 History of Medicine	Junior standing	F, SP	4
MB 330 Disease and Society		SP, SU (Ecampus only)	3

## Physiology (select one of two tracks below)

### Physiology Track I: Comparative Vertebrate Track (14 credits total)

Z 422 Comparative/Functional Vertebrate Anatomy <b>OR</b> Z 425 Embryology and Development	BI 221, 222, 223 (C-), CH 332 BI 311, BB 314, junior standing	F F	5 5
Z 431 Vertebrate Physiology I	BI 221, 222, 223 (C-), CH 332	W	4
Z 432 Vertebrate Physiology II <b>AND</b> Z 442: Lab	Z 431 (C-)	SP	(3 + 2)

### Physiology Track II: Human Track (15 credits total)

BI 331-333/341-343 Advanced Human Anatomy and Physiology and Lab	BI 221-223 (C-); CH 233/263 (C-), JR standing	F, W, SP (taken in order)	5,5,5
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## Experiential Learning or Biological Science/Psychology Elective Course (select one of two tracks below)

### Track I: Select any combination of 3 credits from the following, or GS 410 Medical Preceptorship credits by approval

BI 309 Teaching Practicum <b>OR</b> BI 409 Advanced Teaching Practicum	By approval	F, W, SP	1-3
BI 401 Research and Scholarship	By approval	F,W,SP,SU	1-3

### Track II: Biological Science/Psychology Elective (select one course from the following)

BB 460 Advanced Cell Biology	BB 314 or BB 451 or BB 492 (C-)	?	3
BI 451 Functional Anatomy of the Human Muscular System	BI 331, 332, 333, 341, 342, 343	SU (by application only)	4
BI 485 Monster Biology	BI 311, 370 (can be concurrent), JR standing	W	3
BI 495 Disease Ecology	BI 370 (C-)	Alternate W	3
BHS/VMB 415 One Health in Practice	Junior standing	W	3
MB 416 Immunology (MB 417 lab is optional)	BB 450 or BB 490	F	3
MB 436 The Human Microbiome	BB 314 or MB 302	SP	3
MB 480 General Parasitology	BI 221, 222, 223 (C-)	W	3
PSY 350 Human Lifespan Development	PSY 201 and 202, sophomore standing	F, W, SP	4
PSY 381 Abnormal Psychology	PSY 201 and PSY 202, sophomore standing	F, W, SP	4
PSY 433 Psychopharmacology	Junior standing	F	4
TOX 411 Fundamentals of Toxicology	BB 350 or BB 450 or BB 490	F	3
Z 425 Embryology and Development (if not used above)	BI 311 and BB 314, Junior Standing	F	5
Z 438 Behavioral Neurobiology <b>OR</b> BB 360 Introduction to Neuroscience	BI 221, 222, 223 (C-); CH 233/263 (C-) BI 221, 222, 223 (C-), CH 233/263 (C-)	SP W	3 3

## Preparing for Medical School

**College of Science Preparing for Medical School webpage:** Review our resources on the College of Science "Preparing for Medical School" website: <https://www.science.oregonstate.edu/premed>. Resources include the "Overview of the Premed Pathway," "Premedical Guide," procedures and deadlines for applying, FAQs, and a list of premed advisors.

## Applying to Medical School

**Application Seminars and Application Readiness:** Application seminars are presented by the Premed Committee Coordinator(s) throughout the academic year to help prepare students who are apply for medical school at the end of the academic year (or who are graduating then). Go to the College of Science "[Premed Application](#)" page to review the steps for preparing to apply to medical school and to assess your application readiness: <https://www.science.oregonstate.edu/premed-application>.

**Admission Test:** Medical school applicants must take the Medical College Admissions Test (MCAT)

<https://students-residents.aamc.org/applying-medical-school/taking-mcat-exam/>.

**References :** It is important to establish relationships with professors and professionals early in your education. Applicants will need a minimum of four references. References that can speak about you beyond your grades and can address your character and professionalism will be particularly important. Applicants should verify letter requirements with individual schools when applying: <https://www.science.oregonstate.edu/premed-faqs>.

**Leadership:** Health profession schools value leadership experience as a way to develop interpersonal skills and the ability to lead as part of a team. There are a variety of ways to incorporate leadership experiences as an undergraduate, including: officer roles in a student club, coordinator for an organization (public, private, or non-profit), or being a peer mentor or an ambassador for your college or department. Students may also consider taking leadership courses or completing the OSU Leadership Minor ([http://agsci.oregonstate.edu/leadership\\_minor/](http://agsci.oregonstate.edu/leadership_minor/)).

**CASPer:** A Situational Judgment Test is required for many health professions programs, including Physician Assistant and Medical schools. CASPer is utilized to assess non-academic attributes, such as empathy, motivation, collaboration, equity, professionalism, and ethics. <https://takealtus.com/casper/>

## Medical Experience

**Internships, volunteering, or working** in health care is important to begin early to gain experience and clarify career choices. See the Medical sections of the list: <http://ib.oregonstate.edu/professional/internship-research/intern-volunteer-list>.

**International Medical Internships** through the OSU study abroad office are a great way to prepare you for work in a diverse population, improve language and/or cross-cultural communication skills, and gain clinical experience through clinic rotations. See: <http://ib.oregonstate.edu/professional/international>.

**Shadowing** and other healthcare experience is a good way to get exposure to the field and to decide if medicine is for you. To learn more about healthcare experience, see <https://science.oregonstate.edu/premed/healthcare-experience>

For details about OSU's Medical Preceptorship program, visit : <http://www.science.oregonstate.edu/node/129>.

**Health Care Careers Summer Enrichment Programs** - See the following link for a searchable databases of summer programs to learn what it is like to work in a health care or research field: <https://services.aamc.org/summerprograms/>

<https://explorehealthcareers.org/enrichment-programs/>

<https://www.naahp.org/public-resources/student-resources/student-announcements/student-opportunities>

**Summer Programs for underrepresented students:** There are summer programs at medical schools designed to help support rural, disadvantaged and underrepresented minority students to gain entrance to professional school. For example, the Summer Health Professions Education Program at <http://www.shpep.org/>

## Study Abroad

Although prerequisite professional school courses should not be done abroad, study abroad is a great opportunity and very feasible for pre-medical students. You can work with your advisor on how to schedule and apply these courses to your degree.

<http://ib.oregonstate.edu/professional/international>.

## Campus Resources

### Pre-Med Listserv:

Join the pre-medical listserv to hear about opportunities for pre-med students. To join, send an email using your ONID account to [premedclub-join@lists.oregonstate.edu](mailto:premedclub-join@lists.oregonstate.edu) and reply to the email response.

### Pre-Med Advising:

Contact your assigned IB advisor or go to <http://ib.oregonstate.edu/advising/appointments>.

### Student Clubs:

**Pre-Med Society:** Society happenings include field trips, speakers, and info on volunteering/community service.

E-mail: [premedclub@oregonstate.edu](mailto:premedclub@oregonstate.edu)

<https://premedclub7.wixsite.com/osupremedsociety>

**Investigative Diagnosis:** Learn to take accurate and comprehensive patient histories and sharpen diagnostic skills.

Email: [diagnosis@oregonstate.edu](mailto:diagnosis@oregonstate.edu)

<http://www.facebook.com/nvestigativediagnosisocietyatOregonState>

**M.A.P.S.** (Minority Association for Premedical Students) – Open to any student who supports minority efforts.

Email: [oregonstatemaps@gmail.com](mailto:oregonstatemaps@gmail.com)

<https://www.facebook.com/OSUMAPS/>

**Pre-SOMA:** (Student Osteopathic Medicine Association) - For students interested in Osteopathic medicine (DO).

<https://www.facebook.com/PreSOMAatOregonState/>

## Research Opportunities:

Although not required by all medical schools, research provides the opportunity to develop analytical and communication skills, an understanding of research methods, and the process of science. For these reasons, it is good preparation for the MCAT and a career in medicine.

<http://ib.oregonstate.edu/professional/research-internships>.