



Majors & Prehealth

Health Professions Advising
2019-20

Keep in Mind...

- This resource has been created to help Princeton undergraduates to visualize how courses required for different concentrations interact with the premed/prehealth requirements and overall graduation timeline.
- We strongly encourage students to talk with advisers and mentors who may be able to provide personalized perspective, such as:
 - Directors of undergraduate studies in academic departments of interest
 - Residential college deans/directors of studies
 - Faculty advisers
 - Peer academic advisers
 - HPA advisers

Keep in Mind...

- Each sample schedule represents one of many ways to complete requirements for each concentration. Work with faculty in your department of interest to create a plan that fits your needs.
- The highlighted courses have been popular with past Princeton prehealth students. This does not imply that HPA recommends or requires that you take these courses. Take the electives that best fit your interests and academic goals.
 - HPA recommends additional MOL/EEB courses for non-science concentrators, for a total of at least 10 science/math classes (preferably 11+)
- The prerequisites listed here represent the courses most common to medical school admission requirements. Double check schools of interest for their specific requirements.



HARVARD
MEDICAL SCHOOL

“Demonstrate aptitude in the biological and physical sciences during their undergraduate years, but not to the exclusion of the humanities and social sciences. A study at Harvard Medical School has shown that students are successful in their medical studies regardless of undergraduate concentration, providing that they have had adequate science preparation. Students are urged to strive for a balanced and liberal education rather than specialized training. No preference is given to applicants who have majored in the sciences over those who have majored in the humanities.”

Yale SCHOOL OF MEDICINE

“The Admissions Committee has no preference as to a major field for undergraduate study and leaves this decision to students with the advice that they advance beyond the elementary level in the field of their choice rather than pursue an undirected program. A liberal education is the supporting structure for graduate study, and must encompass understanding of the humanities, arts, and society as well as the scientific foundations of technology and civilization. The student of medicine enters a profession closely allied to the natural sciences and must be prepared to cope with chemistry and biology at a graduate level.”

University Requirements & Premed

Prehealth Requirements	AB Gen Ed Requirements	BSE Gen Ed Requirements
MOL 214 + EEB 211	STL	STL
CHM 201 + 202	STL	STL
CHM 301 + 302/304	STL	STL
MOL 345	STN	STN
PHY 101/103 + 102/104/108	STL	STL
MAT 103 + Stats	QR	QR
2 Semesters English/Literature	WRI Lit course – LA/EC	WRI Lit course – LA/EC
PSY / SOC (for MCAT prep)	2 SA	Six additional courses in humanities & social sciences (across at least four distribution areas)
	1 EM	
	1 EC/LA	
	1 HA	
	Language	

By taking the prerequisites, you can fulfill one LA/EC (depending on the course), plus STL/STN and QR gen ed requirements.

Many SA courses include materials from the PSY/SOC portion of the MCAT.

Prerequisites for other Health Professions

	Gen Chem	Organic Chem	Biochem	Biology	Anat & Phys	Physics	Math	Other
Dental (DDS, DMD)	✓	✓	✓	✓		✓	some	
<u>Veterinary</u> (DVM, VMD)	✓	✓	✓	✓		✓		
<u>Optometry</u> (OD)	✓	1 sem	some	✓	some	✓	stats	microbio, psyc
Nurse Prac, (DPN)	some				many		stats	microbio, psyc
<u>Pharmacy</u> (Pharm D)	✓	✓	some	✓	✓	some	✓	microbio, econ
<u>Physician Assistant</u> (MS)	✓	some	some	✓	some	some	some	
<u>Physical Therapy</u> (DPT)	✓			✓	✓	✓	stats	psyc

<https://hpa.princeton.edu/explore-health-professions> for more

Majors & Premed Overlap

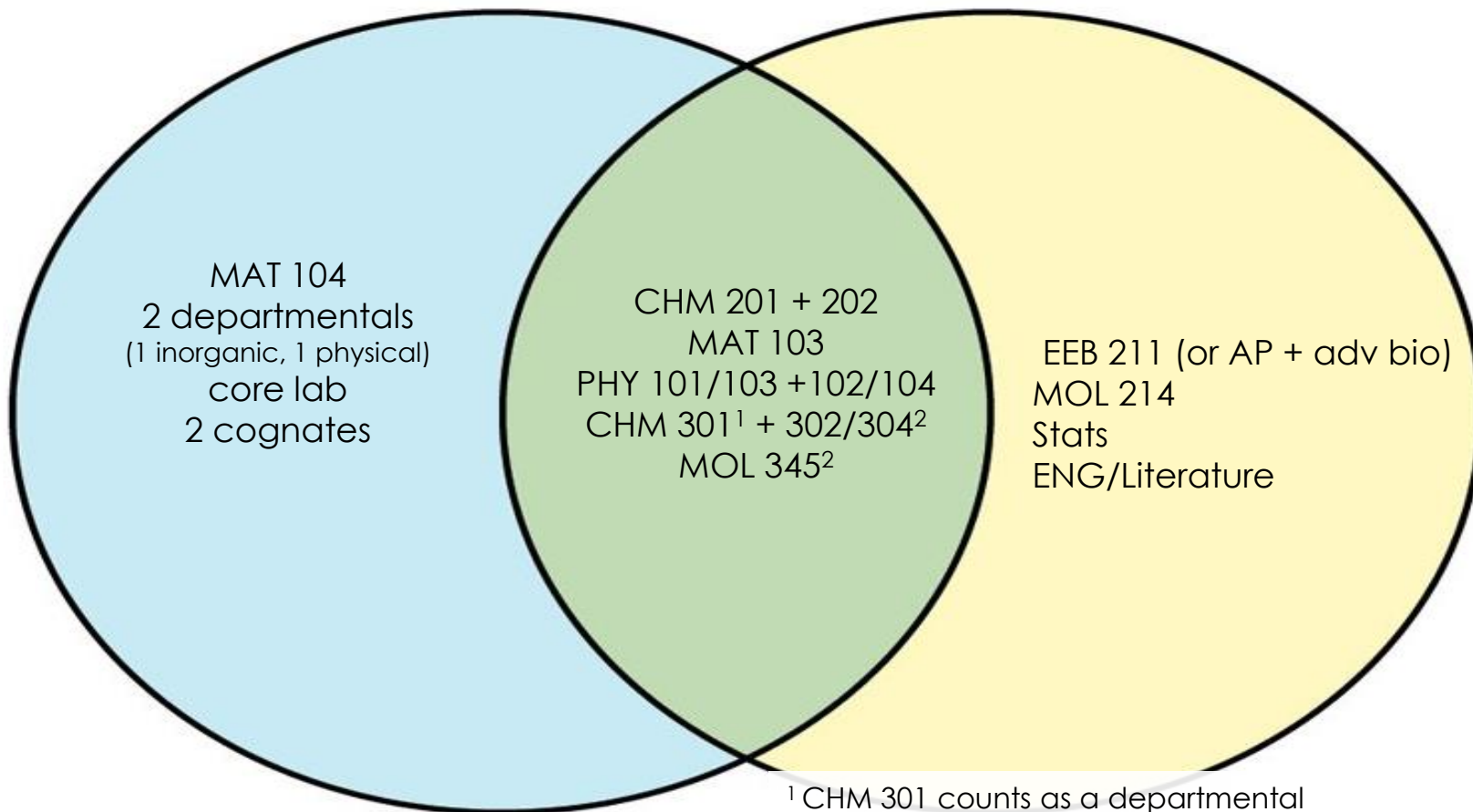
Dept	Major only	Major + Premed	Premed only	Total	Comments
<u>ANT</u>	9		12	21	ANT requirements likely to fulfill SA, EM, EC gen eds
<u>CBE</u>	16	10	3	29	
<u>CHM</u>	6	8	4	18	
<u>COS AB</u>	12	2	10	24	
<u>COS BSE</u>	13	2	10	25	
<u>EEB</u>	6	10	2	18	
<u>ECO</u>	11	1	11	23	ECO requirements likely to fulfill SA gen eds
<u>MOL</u>	5	11	2	18	
<u>NEU</u>	10	5	7	22	
<u>PSY</u>	10	2	10	22	PSY requirements likely to fulfill SA, EC gen eds
<u>SOC</u>	8	1	11	20	SOC requirements likely to fulfill SA gen eds
<u>WWS</u>	14	1	11	26	WWS requirements likely to fulfill HA, SA gen eds

Chemistry

**Courses required for
CHM only (6)**

**Courses that are CHM
+ premed reqs (8)**

**Courses that are
premed only (4)**



¹ CHM 301 counts as a departmental

² CHM 302/304 and MOL 345 count as cognates

Consult with the department to
discuss your specific course plans!

CHM Sample Schedule

	Fall	Spring
Frosh (9)	CHM 201 MAT 103 Gen Ed Elective Language 1	CHM 202 MAT 104 MOL 214 WRI Language 2
Soph (8)	CHM 301 (Departmental 1) PHY 101/103 Gen Ed Elective Stats	CHM 302/304 (Cognate 1) PHY 102/104 Gen Ed Elective Gen Ed Elective
Junior (8)	CHM Core Lab (Departmental 2) CHM Departmental 3 Gen Ed Elective Open Elective JP	MOL 345 (Cognate 2) Gen Ed Elective Open Elective Open Elective JP
Senior (6)	CHM Cognate 3 CHM Departmental 4 ENG/Literature EEB 211	CHM Cognate 4 Open Elective Thesis (2)

Students must complete Gen Chem, Organic Chem, Physics, and Math before junior year in order to enter the department.

CHM Highlighted Departmentals

- CHM 306 – Physical Chem: Chemical Thermodynamics & Kinetics
- CHM 440 – Drug Discovery in the Genomics Era
- Cognates in MOL, EEB, CBE

Sample Prehealth CHM Theses

- Development Of Neuroprotection Assay And Analysis Of Endogenous Production For Eicosanoyl-5-hydroxytryptamide
- Heterologous Expression Of A Type II Polyketide Synthase From Blautia Wexlerae, A Human Intestinal Commensal
- A Mechanistic Investigation Of Serine Hydroxymethyltransferase Inhibition In Lymphoma And Leukemia Cell Lines
- Quorum Sensing Agonists For Cholera Therapy: Synthesis, Evaluation, And Studies In Nanoparticle Delivery
- Structural Characterizations Of Proteins In An Antibiotic Biosynthesis Pathway Using Small Angle X-ray Scattering And X-ray Crystallography
- Templating Cell Alignment Inside Polymer Tubes And On Hydrogel Surfaces For Peripheral And Central Nervous System Repair
- Understanding The Contribution Of The Non-oxidative Pentose Phosphate Pathway To Cancer Cell Metabolism
- Using Chemical Patterning To Spatially Control Cell Growth: A Versatile Technology For Improving Tissue Engineering Devices
- Using NMR To Manage Non-Uniform Samples And Probe The Metabolomic Profile Of Laminitis In Horse Blood Serum

These examples show you ways in which students paired their interests in chemistry and medicine, but there is no requirement that students complete a medically-oriented thesis!

CHM: Additional Resources

Undergraduate Announcement:

ua.princeton.edu/academic-units/department-chemistry#

Department website:

chemistry.princeton.edu/undergraduate

Independent work guide:

undergraduateresearch.princeton.edu/independent-work/guides

HPA Peer Adviser:

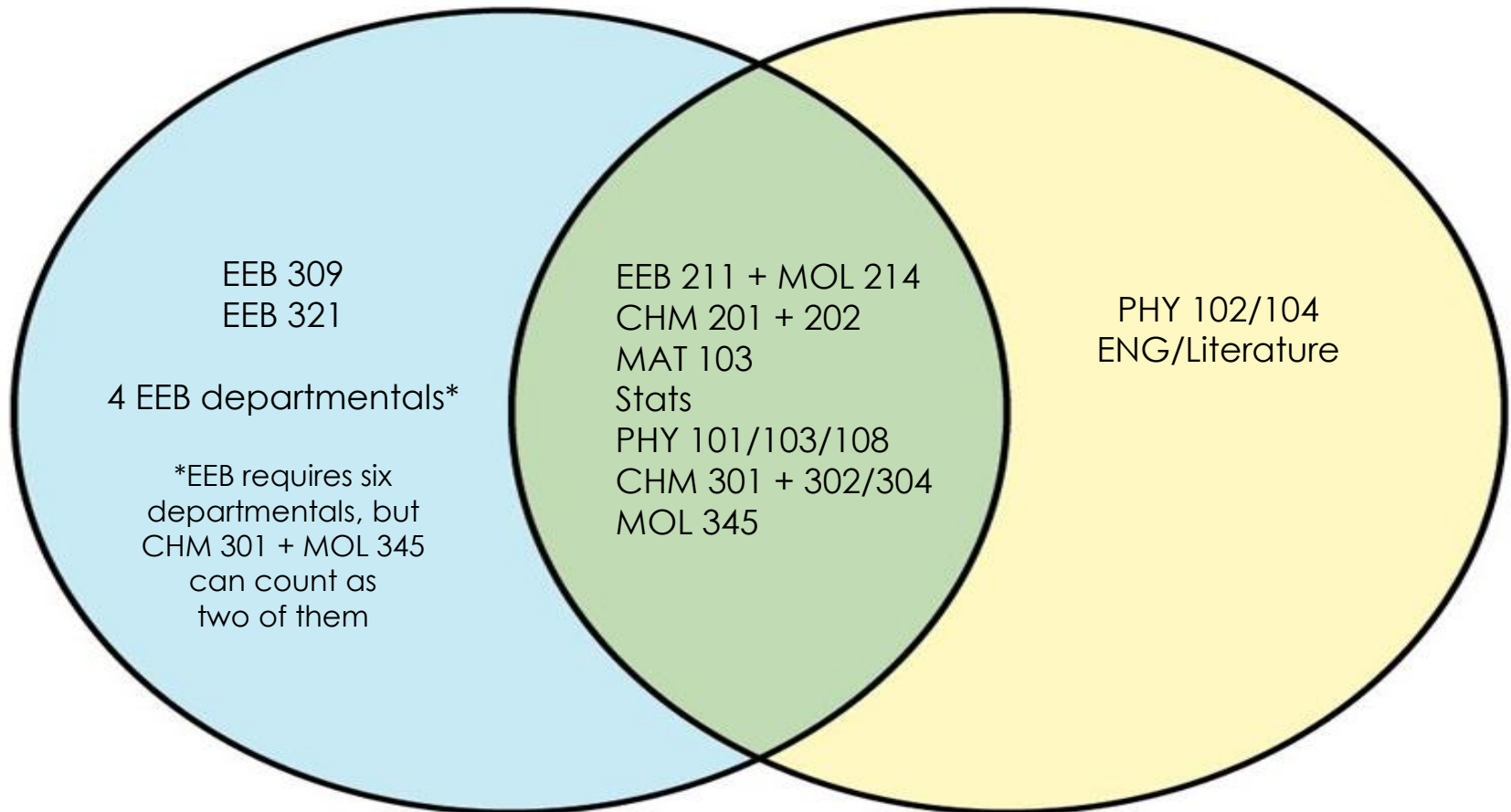
Name	College	Dept	Intended Certificate	Email
Dylan Kim '21	Rocky	CHM	Global Health & Health Policy Applications of Computing	dkkim@princeton.edu

Ecology & Evolutionary Biology

**Courses required for
EEB only (6)**

**Courses that are EEB +
premed reqs (10)**

**Courses that are
premed only (2)**



Consult with the department to
discuss your specific course plans!

EEB Sample Schedule

	Fall	Spring
Frosh (9)	CHM 201 MAT 103 Gen Ed Elective Language 1	CHM 202 MOL 214 WRI Gen Ed Elective Language 2
Soph (8)	CHM 301 (Departmental 1) EEB 211 Gen Ed Elective Open Elective	CHM 302/304 Stats Gen Ed Elective Open Elective
Junior (8)	PHY 101 MOL 345 (Departmental 2) EEB 309 (Departmental 3) Gen Ed Elective JP	PHY 102 or 108 Departmental 4 Departmental 5 Gen Ed Elective JP
Senior (6)	EEB 321 (Departmental 6) Departmental 7 ENG/Literature	Departmental 8 Open Elective Open Elective Thesis (2)

Consult with the department to
discuss your specific course plans!

EEB Sample Schedule: Study Abroad

	Fall	Spring
Frosh (9)	CHM 201 MAT 103 Gen Ed Elective Language 1	CHM 202 MOL 214 WRI Gen Ed Elective Language 2
Soph (8)	CHM 301 (Departmental 1) EEB 211 Gen Ed Elective Open Elective	CHM 302/304 Stats Gen Ed Elective Open Elective
Junior (8)	MOL 345 (Departmental 2) EEB 309 (Departmental 3) Gen Ed Elective Open Elective JP	Departmental 4 Departmental 5 Departmental 6 Departmental 7 JP
Senior (6)	PHY 101 EEB 321 (Departmental 8) ENG/Literature	PHY 102/108 Gen Ed Elective Open Elective Thesis (2)

Students can also study abroad senior spring if they take four courses in the fall.

EEB Highlighted Approved Departmentals

- EEB 303 – Agriculture, Human Diets and the Environment
- EEB/ENV 304 – Disease Ecology, Economics and Policy
- EEB 314 – Comparative Physiology
- EEB 315/ANT 215 – Human Adaptation
- EEB 325 – Mathematical Modeling in Biology and Medicine
- EEB 326 – Human Genomics: The Past, Present and Future of the Human Genome
- EEB 327 – Immune Systems: From Molecules to Populations
- EEB 328 – Ecology and Epidemiology of Parasites and Diseases
- EEB/GHP 351 – Epidemiology
- EEB 403 – Genes and Neurons Underlying Behavioral Evolution
- Advanced MOL courses with prior approval

Sample Prehealth EEB Theses

- [At Risk: Modeling HIV/Hepatitis C Coinfection and Interventions in Urban Populations A Case Study of Newark, NJ](#)
- [Climatic Drivers Of Diarrheal Disease In Thailand: The Role Of Helminth Co-infection](#)
- [From Statistic to Holistic: An Analysis of Measles Elimination in Sindh, Pakistan Based on 2017 Infection Dynamics and Professional Opinion](#)
- [HIGH STEAKS: Quantifying The Effects Of A User Fee On Antibiotic Use in Livestock and Identifying Policy Implications](#)
- [The Impact of Tropical Cyclones on Infectious Disease Incidence and Public Health Infrastructure in Madagascar](#)
- [The Major Factors Driving Global Antibiotic Consumption: A Quantitative Analysis of the Leading Determinants from 2000 to 2015](#)
- [Socioeconomic Determinants of Health Outcomes in an American Urban Environment: Non-biological Drivers of Health in Washington, D.C.](#)
- [The Variation of Baboon Immunity with Age and Gender: What we can learn from Fecal Parasite Burden and Immunoglobulin Levels](#)
- [The Zika Virus And Congenital Birth Defects: An Investigation Into the Role Of The Placenta and the Time Of Infection](#)

EEB: Additional Resources

Undergraduate Announcement:

ua.princeton.edu/academic-units/department-ecology-and-evolutionary-biology#

Department website:

<https://eeb.princeton.edu/undergraduate>

Independent work guide:

undergraduateresearch.princeton.edu/independent-work/guides

HPA Peer Advisers:

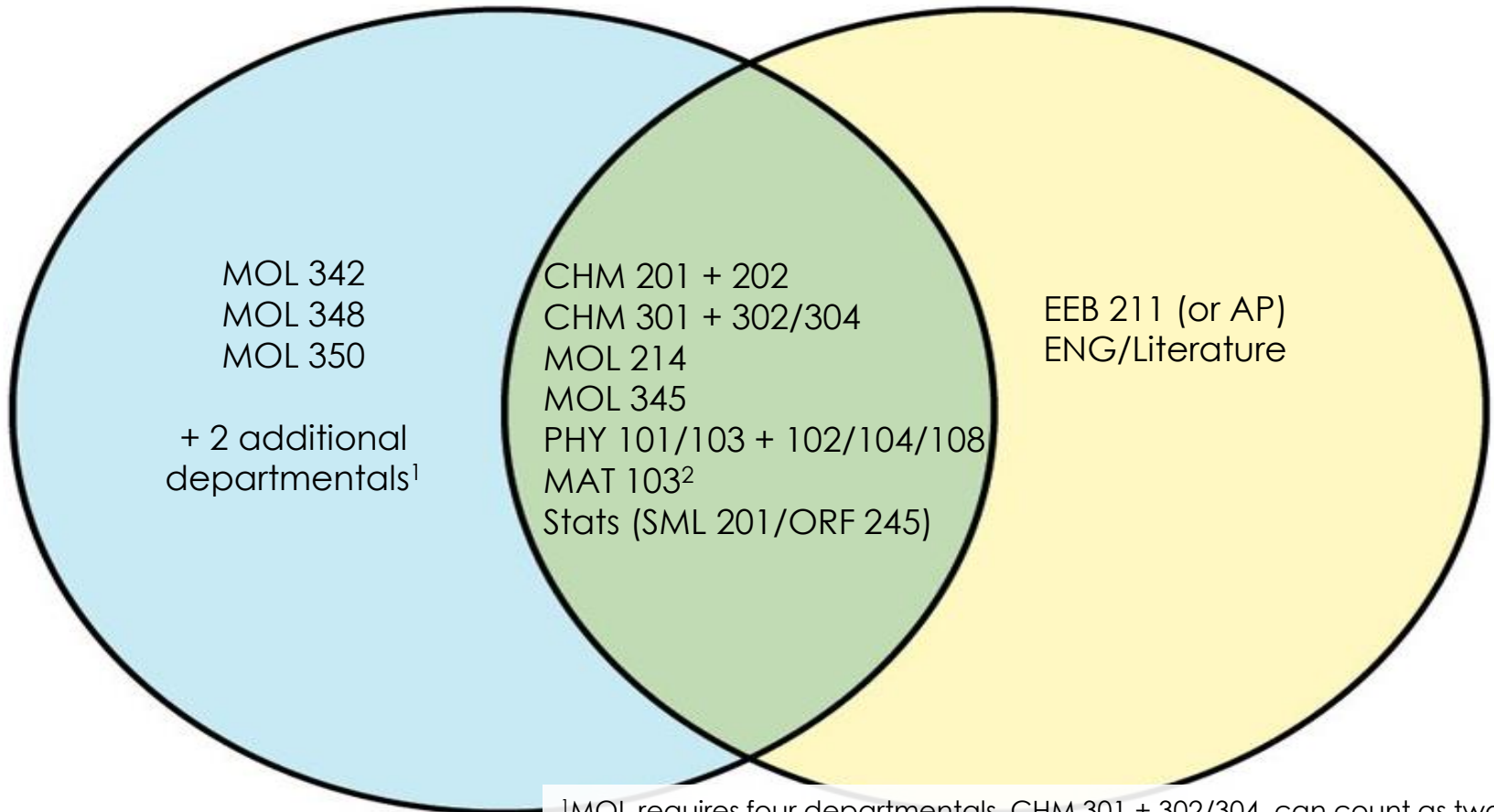
Name	College	Dept	Intended Certificate	Email
Jayson Saleet '20	Butler	EEB	Global Health & Health Policy	jsaleet@princeton.edu
Claire Thompson '20	Whitman	EEB		clairemt@princeton.edu

Molecular Biology

**Courses required for
MOL only (5)**

**Courses that are MOL
+ premed reqs (11)**

**Courses that are
premed only (2)**



¹MOL requires four departmentals. CHM 301 + 302/304 can count as two

² COS 126 is recommended for students with AP Calc

Consult with the department to discuss your specific course plans!

MOL Sample Schedule

	Fall	Spring
Frosh (9)	CHM 201 MAT 103 Gen Ed Elective Language 1	CHM 202 MOL 214 or Open Elective WRI Gen Ed Elective Language 2
Soph (8)	CHM 301 (departmental 1) EEB 211 Gen Ed Elective Open Elective or MOL 214	CHM 302/304 (departmental 2) SML 201/ORF 245 or Gen Ed Elective MOL 214 or MOL 348 ¹ Open Elective
Junior (8)	MOL 350 MOL 345 PHY 101/103 Gen Ed Elective JP	MOL 342 PHY 108 Gen Ed Elective or SML 201/ORF 245 Gen Ed Elective or MOL 348 JP
Senior (6)	Departmental 3 ENG/Literature Open Elective	Departmental 4 Open Elective Open Elective Thesis (2)

¹ MOL 348 in sophomore spring is suitable only if MOL 214 was taken in a prior term
For more sample timelines: molbio.princeton.edu/undergraduate/major/typical-paths

Not an exhaustive list! Check
Course Offerings each term.

MOL Selected Departmentals

- MOL 340 – Molecular & Cellular Immunology
- MOL 380 – Modern Microbiology
- MOL 423 – Molecular Basis of Cancer
- MOL 425 – Infection: Biology, Burden and Policy
- MOL 459 – Viruses: Strategies and Tactics
- MOL 460 – Diseases in Children: Causes, Costs, and Choices
- Approved departmentals from other departments, which include:
 - CBE 440 – The Physical Basis of Human Disease
 - CHM 440 – Drug Discovery in the Genomic Era
 - NEU 501 – Neuroscience: From Molecules to Systems to Behaviors
 - All 300-level and above EEB courses where EEB is the primary listing

These courses have been popular with prehealth students in the past. For a list of all approved MOL departmentals: molbio.princeton.edu/undergraduate/major/departmentals

Sample Prehealth MOL Theses

- [Characterization of Rotavirus Strains in Ghana Before and After Vaccine Introduction](#)
- [Characterizing the Mitochondrial Virus-Host Interactome During HCMV Infection](#)
- [Development of experimental cell culture and animal models to recapitulate persistent hepatitis B virus infection](#)
- [Epigenetic and Phenotypic Effects of Fracking Exposure in Children from the Fragile Families and Child Wellbeing Study](#)
- [Establishing Zebrafish Cilia Motility Mutants as Models of Human Idiopathic Scoliosis](#)
- [Global Analysis of Glucose-Stimulated Gene Expression Identifies Tenascin-C as a Relevant Player in Diabetic Nephropathy](#)
- [Improving Detection of Adenovirus Infections Following Hematopoietic Stem Cell Transplants](#)
- [Investigating the Effects of a Novel Fibronectin Mutation: The Role of ER Stress and Collagen Fibrillogenesis in the Pathogenesis of Spondylometaphyseal Dysplasia](#)
- [Mapping CqsS Binding and Activation in Vibrio Cholerae](#)
- [The Regulation of Elf5 Methylation in Breast Cancer Progression](#)
- [Silencing Cancer: A Meta-Analysis of RNAi Therapeutics for the Treatment of Cancer in Phase I Clinical Trials](#)

MOL: Additional Resources

Undergraduate Announcement:

ua.princeton.edu/academic-units/departments-molecular-biology

Department website:

molbio.princeton.edu/undergraduate

Independent work guide:

undergraduateresearch.princeton.edu/independent-work/guides

MOL Medical Career adviser:

Dan Notterman, MD – dan1@princeton.edu

HPA Peer Advisers:

Name	College	Dept	Intended Certificate	Email
Josue Chirinos '20	Mathey	MOL	Global Health & Health Policy	josuec@princeton.edu
Alison Heilbronner '20	Mathey	MOL	Global Health & Health Policy	alisonkh@princeton.edu
Lily Kim '21	Whitman	MOL		mk31@princeton.edu
Alex Zhu '21	Forbes	MOL		arzhu@princeton.edu

Additional resources

- Princeton Office of the Dean of the College Major Choices website:
odoc.princeton.edu/advising/choosing-major
- Departmental Independent Work Guides:
undergraduateresearch.princeton.edu/independent-work/guides

Additional resources

HPA Peer Advisers by department: hpa.princeton.edu/about-hpa/hpa-peer-advisers

Name	College	Dept	Intended Certificate	Email
Jaein Jung '20	Butler	ANT	Global Health & Health Policy	jj22@princeton.edu
Kiersten Rasberry '21	Whitman	ANT	Global Health & Health Policy	krasberry@princeton.edu
Elisabeth Slighton '20	Rocky	ANT	Global Health & Health Policy	es19@princeton.edu
Chitra Parikh '21	Rocky	ARC	Global Health & Health Policy	chitrap@princeton.edu
Dylan Kim '21	Rocky	CHM	Global Health & Health Policy Applications of Computing	dkkim@princeton.edu
Jayson Saleet '20	Butler	EEB	Global Health & Health Policy	jsaleet@princeton.edu
Claire Thompson '20	Whitman	EEB		clairemt@princeton.edu
Levy Nathan '21	Wilson	GEO	Neuroscience	lnathan@princeton.edu
Linus Wang '21	Butler	MAE		linusw@princeton.edu
Josue Chirinos '20	Mathey	MOL	Global Health & Health Policy	josuec@princeton.edu
Alison Heilbronner '20	Mathey	MOL	Global Health & Health Policy	alisonkh@princeton.edu
Lily Kim '21	Whitman	MOL		mk31@princeton.edu
Alex Zhu '21	Forbes	MOL		arzhu@princeton.edu
Rucha Alur '20	Rocky	NEU		ralur@princeton.edu
AJ Chen '21	Forbes	NEU		andysc@princeton.edu
Nivi Thomas '20	Wilson	NEU	Applications of Computing	nmthomas@princeton.edu

Additional resources

HPA Peer Advisers by college: hpa.princeton.edu/about-hpa/hpa-peer-advisers

Name	College	Dept	Intended Certificate	Email
Jaein Jung '20	Butler	ANT	Global Health & Health Policy	jj22@princeton.edu
Jayson Saleet '20	Butler	EEB	Global Health & Health Policy	jsaleet@princeton.edu
Linus Wang '21	Butler	MAE		linusw@princeton.edu
AJ Chen '21	Forbes	NEU		andysc@princeton.edu
Alex Zhu '21	Forbes	MOL		arzhu@princeton.edu
Josue Chirinos '20	Mathey	MOL	Global Health & Health Policy	josuec@princeton.edu
Alison Heilbronner '20	Mathey	MOL	Global Health & Health Policy	alisonkh@princeton.edu
Rucha Alur '20	Rocky	NEU		ralur@princeton.edu
Elisabeth Slighton '20	Rocky	ANT	Global Health & Health Policy	es19@princeton.edu
Dylan Kim '21	Rocky	CHM	Global Health & Health Policy Applications of Computing	dkkim@princeton.edu
Chitra Parikh '21	Rocky	ARC	Global Health & Health Policy	chitrap@princeton.edu
Levy Nathan '21	Wilson	GEO	Neuroscience	lnathan@princeton.edu
Lily Kim '21	Whitman	MOL		mk31@princeton.edu
Kiersten Raspberry '21	Whitman	ANT	Global Health & Health Policy	kraspberry@princeton.edu
Claire Thompson '20	Whitman	EEB		clairemt@princeton.edu
Levy Nathan '21	Wilson	GEO	Neuroscience	lnathan@princeton.edu
Nivi Thomas '20	Wilson	NEU	Applications of Computing	nmthomas@princeton.edu