MBB Major Checklist 1-page updated June 2024

MBB: Suggested Path			
Year	**Course #**	**Title**	**Credits**
First Year	119:115/116	General Biology	4,4
	119:117	Bio Research Lab (Gen Bio Lab)	2
	160:161/162 or 160:163/164 (H=Honors)	General Chemistry I & II	4,4
	160:171	Intro. To Experimentation (Chem. Lab)	1
	640:151/152 or 640:135/138	Calculus I & II (Calc II may be replaced by Statistics: 960:401 (3cr) or Statistics 960:211(2cr) and 212(2cr)	4,4
	***First Year students with AP Biology credit may opt for Intro to MBB Research lab 694:214 (3cr,Spring only) or 694:215 Honors (4cr, Fall only)**		(3 or 4, see year 2*)
Second Year	160:307/308 or 160:315/316 (H)	Organic Chemistry I & II **	4,4
	160:309 or 311(H)	Organic Chemistry Lab (may be deferred to Year 3)	2
	750:203/204	Physics I & II (other Physics Lecture+Lab are allowed, see DN)	3,3
	750:205/206	Physics I & II Lab	1,1
	447:380	Genetics	4
	694:316 (4cr,Honors Fall only) or 694:315 (3cr, Spring only)	Intro to MBB Research lab (or take in First Year - see above)	3 or 4
	Student wanting the MBB Major Option 2 (P-Chem) may want Calc III (640:651) in Year 2		
Third Year	694:383 (Fall only)	MBB Seminar: careers in science (only for MBB majors)	1
	694:407 (Fall only) or 694:395 Fall, Spring	Molecular Biology & Biochemistry-I (mostly Biochem)	3
	694:408 (Spring only)	Molecular Biology & Biochemistry-II (mostly Mol. Biol.)	3
	MBB electives (3x3 credits) see list below, typically split between Years 3 and 4		3,3,3
	694:381 Fall 694:382 Spring	Lab research in a P.I.'s lab, see below	3 3
Fourth Year	694:484 (Spring only)	MBB Seminar: Research Presentations (only for MBB majors)	1
	694:481 Fall 694:482 Spring Honors thesis option - see below	Continue with Lab research in a P.I.'s lab, see below	3 3
	Students doing the MBB Major Option 2 (P-Chem) take two semesters of P-Chem + 1 Elective - see below		3,3

MBB Electives see DN (Degree Navigator)

- Analytical Methods in Biology (694:230 [Fall]) (no pre-reqs)
- Introductory Computational Biology (694:390 [Spring]) (no pre-reqs)
- Molecular Pathways and Signal Transduction (694:411 [Fall)]) (pre-req 407 or 395)
- Proteomics & Functional Genomics (694:412 [Spring])
- Chromatin and Epigenomics (694:413, [Fall]) (Pre-req 407/395 and 408)
- Membrane Dynamics (694:420 [Fall, but not always offered)
- Biology of Aging (694:421 [offering is sporadic) (Pre-req 407 or 395)
- Gene Regulation: Clocks to Cancer (694:492 [Spring]) (Pre-req 407 or 395)

MBB Major Option I (9 credits) "Electives"

- Two 3-credit MBB electives
- One 400 level 3-credit elective from MBB or a Department in the Division of Life Sciences (DLS) or approved by the UG Director

MBB Major Option II (13 credits) "P-Chem"

- Multivariable Calculus (640:251, 4) (Calculus 640:151,152 are required for this course)
- Physical Chemistry (160:327-328, 3,3) (requires 640:251 as a prerequisite) or Physical Chemistry: Biochemical Systems (160:341-342, 3,3). See DN for alternative P-Chem courses.
- One 3-credit MBB Elective course.

Lab Research (research in a P.I.'s lab) has 2 options:

- Lab Research Option I: Students must accumulate 12 or more credits of research (usually 3 credits x 4 semesters).
- Lab Research Option II: Students accumulating 6-11 credits of research must take an additional MBB elective.
- Non-lab option is almost never used. Only research in the third and fourth years counts towards the major – exceptions will need the UG Director's approval; also see Degree Navigator.

MBB Dept. Honors Thesis: only in final year. Please visit https://mbb.rutgers.edu/academics/undergraduate/departmental-honors-program and contact UG Director if you are interested.

The MBB Undergraduate Director Prof. Sam Gunderson gunderson@dls.rutgers.edu recommends declaring MBB on My Major as early as your first semester of Organic Chem or first semester in Physics.

****In select cases, an advanced elective will be allowed to substitute for Organic-II but approval is needed from the UG director as most medical schools and MBB-based graduate programs require two semesters of Organic chemistry.**