



Department of Molecular Biology Advising Handbook

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Mission Statement

The Department of Molecular Biology offers a range of courses that teach students how to understand organisms on a molecular and cellular level. Our focus is on the universal properties shared by all living things, such as the inheritance and use of genetic information. Our majors learn critical thinking skills in molecular biology, such as how to perform and interpret experiments and how to develop and test hypotheses about model organisms, cells, and molecules. More broadly, students will understand how skills and knowledge learned in molecular biology apply to other areas of their lives as global citizens.

ADEI Statement

The Department of Molecular Biology celebrates diversity and embraces evidence-based practices to promote inclusivity in our classes and labs. Antiracism, diversity, equity, and inclusion are critical values that inform our efforts to make all students feel welcome and supported within our discipline. These values are also integral to the practice of science, leading to greater innovation.

We also recognize that power in the discipline of Molecular Biology has, from its beginning, been held by individuals identifying as white and male, and has been limited by a dearth of diverse perspectives. Furthermore, research in our discipline has exploited marginalized and vulnerable groups. As a department, we strive to openly teach the honest history of our discipline and use biology itself to promote antiracism. We recognize that race is a social construct that is not supported by genetic evidence, and we denounce how race has been used as a proxy for genetic difference.

One purpose of a statement like this is to clarify our values as a department and hold ourselves accountable to them. We treat this as a living document that is continually updated, including with input from student voices.

Land Acknowledgment

The Department of Molecular Biology recognizes the connection between our spaces for learning and research and the broader context of the land that Colorado College occupies. Our department is located in the unceded territory of the Ute Peoples. Early documented peoples that occupied this land include the Apache, Arapaho, Comanche, and Cheyenne. Many other tribes have also occupied this space. A list of tribes and further information can be found on the [Colorado College Indigenous Community web page](#). The purpose of this land acknowledgment is both to combat erasure of these facts, as well as to express gratitude for the long history of stewardship of these lands by Indigenous peoples.

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A. Description of the Molecular Biology Major

Requirements:

No single one-block course can satisfy more than one requirement.

- 1 unit of organismal biology (BE105 Biology of Plants, BE106 Biology of Animals, BE107 Biology of Microbes, or HK204 Introduction to Human Anatomy)
 - AP Biology 4 or 5, or IB HL 5 satisfies this requirement
 - IB Biology of 6 satisfies this requirement **OR** satisfies the MB131 requirement
- 1 unit of MB131 Introduction to Molecular and Cellular Biology
 - IB HL of 6 or 7 satisfies this requirement
- 1 unit of MB201 Laboratory in Molecular and Cellular Biology and Genetics
- 1 unit of MB231 Genetics
- 1 unit of MB300-level lecture/discussion-based MB elective
 - These are intended for sophomores and juniors
- 1 unit of MB400-level lecture/discussion-based MB elective
 - These are intended for juniors and seniors
- 2 units of 300- or 400-level laboratory-rich electives
 - One or both units can be satisfied through mentored research with an MB professor (MB399, MB498, MB499, or MB397). Note: MB397 Mentored Research in Molecular Biology Alternative Format is a 0.5 unit course in an extended format over 4 blocks or half block; MB397 may be taken twice to count as 1 unit, or 4 times to count as 2 units.
 - Selected non-MB courses can meet one of these two units, but one of these units must be satisfied by an MB course offering. List of courses outside MB that can satisfy one (but not two) of these units: CH382 Biochemistry I; HK304 Advanced Human Anatomy; HK306 Advanced Joint Anatomy; HK321 Human Physiology; HK354 Advanced Head and Neck Anatomy; MA256 Mathematical Models in Biology; PY299 Neuroscience (counts as 1 unit); BE365 Plant Physiology; BE280 Population Genetics; BE465 Techniques in Molecular Ecology and Systematics.
- 1 unit of elective in the biological sciences.
 - Can be satisfied by any MB course for majors, or BE course for majors, or by selected courses in Biochemistry, Mathematics, Neuroscience, Anthropology, or Human Biology and Kinesiology (see list).
 - List: any MB course other than MB100, MB131, MB201, MB231; any BE course other than BE100; CH382 Biochemistry I; CH383 Biochemistry II; HK204 Introduction to Human Anatomy; HK304 Advanced Human Anatomy; HK306 Advanced Joint Anatomy; HK321 Human Physiology; HK354 Advanced Head and Neck Anatomy; MA256 Mathematical Models in Biology; PY299 Neuroscience (counts as 1 unit); AN230/MB230 Human Evolution; AN202 Human Biological Variation.

- 1 unit of Senior Capstone in Molecular Biology, MB497, which will be offered twice each year, once in the fall (Block 4) and once in the spring (Block 6). A third block of MB497 may be offered some years depending on the number of senior MB majors.
- A maximum of 2 units of mentored research such as MB209, MB397, MB399, MB498, MB499, CH401, and CH403 can be counted toward the Molecular Biology major. All of these mentored research blocks require consent of instructor and agreement from the supervising professor at least one block in advance.
- 4 units of Chemistry (CH107 General Chemistry I or CH117 General Chemistry I with Environmental Emphasis, CH108 General Chemistry II, CH250 Structures of Organic Molecules, and CH251 Reactions of Organic Molecules).
- 2 units from selected courses in Mathematics, Computer Science, or Physics (MA125 Pre-Calculus and Calculus (counts as two units toward the requirement); MA126 Calculus I; MA127 Calculus I and II Accelerated; MA129 Calculus II; MA117 Probability & Statistics; MA217 Probability and Statistical Modeling; CP115 Computational Thinking; CP122 Computer Science I; CP222 Computer Science II; PC141 Physics for the Life Sciences I; PC142 Physics for the Life Sciences II). May be satisfied by AP or IB credit recognized by the registrar.
- Must attend Molecular Biology Day as a senior
- Must participate in departmental assessment activities such as the senior exit survey and examination
- Must complete the senior seminar requirement (See section F for details).

B. Suggestions for completing the 16 units for the major in four years

First Year

- Take the mathematics placement exam (See Quantitative Reasoning Center);
- CH107 or CH117; and
- MB131; and
- MB201; and
- CH108.
- *Note: students who did not take calculus in high school are advised to take calculus or statistics before taking any chemistry or molecular biology courses. See p. 4.*

Sophomore Year

- One unit of organismal biology; and
- MB231; and
- CH250; and
- CH251; and
- Find a Molecular Biology advisor and declare the Molecular Biology major through the registrar's office.

Junior Year

- One 300-level MB discussion course; and

- One 300-level MB laboratory intensive course; and
- Two units of math/computer science/physics.

Senior Year:

- One 400-level MB discussion course; and
- One 300- or 400-level MB laboratory intensive course; and
- One elective unit in the biological sciences; and
- MB497 (the senior capstone course); and
- Required seminar participation; and
- Required assessment activities.

Research: You may wish to complete a research opportunity during a block or during one of your last two summers in college. There are opportunities within MB at CC and at other institutions. Discuss this possibility with your Molecular Biology advisor and sign up for the [MB Research Opportunities](#) Canvas page. Summer research positions are highly competitive, so apply broadly.

Study abroad/away: Many students wish to study abroad for one semester during the sophomore or junior year. Contact Heather Powell Browne in the [Center for Global Education and Field Study](#) to find a study abroad/away program that is compatible with a major in Molecular Biology, and learn more about the MB-specific suggestions from the approved list at the end of this handbook (see Appendix 4). Heather can also explain [how financial aid applies](#) to various study abroad/away opportunities.

Phi Beta Kappa: In order to be eligible, you must have a high GPA and satisfy certain requirements; see <https://www.coloradocollege.edu/other/pbk/membership-requirements.html>

All-College Requirements

All students at Colorado College must complete the All-College Requirements: <https://www.coloradocollege.edu/basics/welcome/leadership/policies/all-college-degree-requirements-policy>

C. Senior Capstone Experience*

1. Seniors must participate in departmental seminars, as posted on www.coloradocollege.edu/academics/dept/molecularbiology/seminars/ For more details about seminar requirements, see section F.
2. Seniors must participate in (attend or present at) Molecular Biology Day.
3. Seniors must pass MB497.
4. Seniors must participate in assessment activities.

*Note: Since we define "senior" as a student within their last 8 blocks at CC, students who anticipate mid-year graduation must complete their seminar attendance requirement and complete MB497 within their last 8 blocks, and must attend MB Day in the spring prior to graduation.

D. AP/IB Biology Credit in Biology

1. Students with a score of 4 or 5 on AP Biology or a score of 5 on Higher Level IB Biology may count that as one unit of organismal biology. Note that this credit does not count as any specific OBE or HBK course.
2. Students with a score of 6 on IB Higher Level Biology may count that as one unit of MB131 **or** as one unit of organismal biology; they should consult with a Molecular Biology professor to decide on the best option
3. Students with a score of 7 on IB Higher Level Biology may count that as one unit of organismal biology **and** as one unit of MB131. They should enroll in MB201 after completing the CH107 pre-requisite. Note that one unit of organismal biology does not count as any specific OBE or HBK course.
4. To formalize your AP or IB credit counting toward the Molecular Biology major/minor, you must have the AP or IB scores reported to the registrar and you must work with your advisor to submit a formal request in Stellaris for the MB Dept chair to approve as an exception to the major requirements.

E. Senior Thesis in Molecular Biology

Eligibility & Expectations

- The thesis is intended for students who have time to spend immersing themselves in the discipline of Molecular Biology for the majority of their senior year, and who have demonstrated an avid interest in molecular biology during their undergraduate careers.
- The thesis is a significant time commitment; we expect that the thesis will take between 10-12 hours of work per week, in addition to a dedicated thesis block.
 - Students should consider their other commitments carefully to ensure they have time to complete the thesis and must consult their MB advisor.
 - Students should plan to work closely with their thesis readers during Blocks 5 & 6, as multiple revisions are usually necessary. Faculty teaching during these blocks may require strict deadlines for submissions of revisions.
- Students interested in doing a thesis must have finished their research before the beginning of Block 2 of their senior year. Typically, a thesis is based on work done over several blocks or during a ~10-week summer research program, or both. To determine if your research is eligible:
 - If you have done research on campus, consult your research mentor.
 - If you have done research off campus, see the “Eligibility Off-Campus Research” section below and consult your MB advisor.
- Failure to meet any of the deadlines or requirements below will disqualify a student from completing a thesis.

Thesis Timeline

- Your primary reader may set additional intermediate deadlines in addition to those listed below, or may set deadlines earlier than those set below.
- You may still complete a thesis if you plan to graduate a semester early, however, you must plan to (1) complete your written thesis and (2) present your thesis during your last semester.

Junior Year

- During the Year: Plan for a research experience that includes a couple blocks of research during the junior year and/or a ~10-week summer research experience on campus at CC or elsewhere such as through the NSF REU program (<https://www.nsf.gov/crssprgm/reu/>). CC summer lab positions are based on an application due on Canvas the last Friday of block 4. NSF REU applications are often due in the early spring semester but check the NSF REU website for specific due dates.
- Block 7: Register for MB499 – Senior Thesis with your research mentor / primary reader.
 - **You must register for – and complete – a thesis block (MB499) during Blocks 1-4.**
 - If you are still waiting on summer research plans during pre-registration, contact your MB advisor to discuss your plans for a thesis.

Senior Year

- First Friday of Block 2: Deadline to submit Senior Thesis Registration Questionnaire.
 - See Appendix 2.
- Last Day of Block 4: Complete draft of thesis due to primary reader.
 - See “Complete First Draft Requirements” below.
- First Tuesday of Block 5: Corrections to first draft returned to student by primary reader.
- Last Friday of Block 5: Student revisions returned to the primary and secondary readers.
 - See “Revised Draft Requirements for the Second Reader” below.
- Last Friday of Block 6: Final reviews of thesis by both readers completed; thesis completed and signed first/title page turned into the MB administrative assistant.
 - See “Final Thesis Requirements” and “Final Thesis Submission” below.
- First Monday of Block 7: Final copy of thesis uploaded to library.
 - See “Final Thesis Submission” below.

Thesis Requirements

Complete First Draft Requirements

1. Due to the primary reader **before the last day of Block 4**.
2. The paper consists of the following sections:
 - a. A title.
 - b. An abstract of 300-500 words.
 - i. Your audience for this abstract is a fellow MB senior.

- c. An introduction of 1,250-1,750 words.
 - i. This introduction must include a review of primary literature in molecular & cellular biology related to the topic of your research.
- d. A methods section.
- e. A results section with at minimum two figures or tables of data.
 - i. It is not acceptable to use the same data in two different formats.
 - ii. Figures and tables must be formatted according to typical professional publications in molecular biology.
- f. A discussion of 1,250-1,750 words.
- g. A works cited section (references)
 - i. Format according to directions from the primary reader.
 - ii. Minimum 6 primary publications cited; published in the previous 10 years.
 - iii. Minimum 2 reviews cited; published in the previous 10 years.
 - iv. Check with your primary reader for the names of appropriate journals.
- h. In-text citations formatted according to directions from the primary reader.

Revised Draft Requirements for the Second Reader

1. Due to the primary and secondary readers **on or before the last Friday of Block 5**.
2. Must address all of the primary reader's concerns prior to submission; this may require multiple drafts during the block.
3. Must include all sections as described in "Complete First Draft Requirements" above.

Final Thesis Requirements

1. Due to the primary and secondary readers **on or before the last Friday of Block 6**.
2. Must address all of the primary and secondary reader's concerns prior to submission; this may require multiple drafts during the block.
3. Must include all sections as described in "Complete First Draft Requirements" above.
4. Should also include a final section, "Acknowledgements".

Final Thesis Submission

Following final approval from your primary thesis advisor, the full thesis must be submitted to the library **before the first Monday of Block 7**.

For more information, and for the thesis submission page, see:

<https://coloradocollege.libguides.com/digitalCC/ThesisSubmissionInformation>

Presentation at Molecular Biology Day

1. Plan a 10-15-minute presentation of your thesis and be prepared to answer questions by students and professors about your research.
2. Thesis students attempting to graduate in December must talk to their advisor and the department chair to arrange an alternative way to fulfill this requirement four blocks in advance of graduation.

Eligibility of Off-Campus Research

- Research done under the supervision of someone off-campus must first be approved as qualifying by the department.
 - You must contact your primary reader during the off-campus research experience to discuss the project before the research concludes to determine if it qualifies as a thesis-eligible project.
 - It is up to you to communicate with your primary reader; if you do not do communicate with your primary reader, you may not do a thesis.
- At minimum, the research must involve:
 - Testing a hypothesis, generating an experimental system to test a hypothesis, or generating data for hypothesis formation. Ultimately, this is at the discretion of the primary reader.
 - Doing a project that includes substantive laboratory or computational experiences typical of the disciplines of molecular biology, genetics, genomics, developmental biology, cell biology, immunology, bioinformatics, molecular evolution, biochemistry, virology, molecular neuroscience, microbiology, and closely related disciplines.
 - Projects in other fields such as public health or ecology may not qualify if they do not involve molecular biology.

F. Senior Seminar Requirements

During the last two semesters, to fulfill the requirements for the major (and to graduate), seniors must fulfill the seminar participation required by the Senior Capstone Experience. To fulfill this requirement, seniors must:

1. Make certain that you are a declared Molecular Biology major.
2. Attend **FOUR** research seminars during your last two semesters (one of these must be the Molecular Biology Day keynote seminar). These will be announced by email to declared Molecular Biology majors, and using flyers in the Department of Molecular Biology.
 - a. Note that **many of these will be in the fall** semester – don't put this off.
3. Prior to each research seminar, read a publication by the seminar speaker, or a related publication, which will be distributed one week prior to the seminar by email.
4. Write a question to ask the author about the work in the publication. Submit this question to both A) your advisor AND to B) the MB administrative assistant in the text of an email **PRIOR TO the seminar**.
 - a. We encourage you to meet with each other to discuss the publication.
 - b. We encourage you to bring a copy of your question to the seminar, so that you may ask the speaker your question.
5. At each seminar, sign in.
6. If the seminar speaker is invited to have lunch or another gathering with students, it is in your best professional interests to attend such gatherings.

7. The paraprofessional will reconcile the sign-in sheet with the questions submitted on time to keep track of student progress fulfilling this requirement.
8. This requirement cannot be met without fulfilling BOTH of the components: question submission ahead of time and attending the seminars.
9. *Ultimately, it is up to each senior to ensure that they fulfill this requirement in order to complete their major and graduate.*

G. The Departmental Minor in Molecular Biology

- 1 unit of MB131 Introduction to Molecular and Cellular Biology
- 1 unit of MB201 Laboratory in Molecular and Cellular Biology and Genetics
- 1 unit of MB231 Genetics
- 2 units of 300- or 400-level MB courses
- 1 unit that is either (a) a 300- or 400-level MB course, or (b) from the list below:
 - List of courses outside MB that can satisfy this unit: CH382 Biochemistry I; HK304 Advanced Human Anatomy; HK306 Advanced Joint Anatomy; HK321 Human Physiology; HK354 Advanced Head and Neck Anatomy; MA256 Mathematical Models in Biology; PY299 Neuroscience (counts as 1 unit); BE365 Plant Physiology; BE280 Population Genetics; BE465 Techniques in Molecular Ecology and Systematics.

Appendix 1. Senior Thesis Registration Questionnaire

Students planning to do a Senior Thesis must register their thesis with the department by the **first Friday of Block 2**.

To register, sign up for the **Opportunities in Molecular Biology Research** Canvas site at: <https://canvas.coloradocollege.edu/enroll/CNYRME>

Then navigate to the MB Senior Thesis Questionnaire at: <https://canvas.coloradocollege.edu/courses/29349/quizzes/4352>

Here are the questions that you will need to answer to complete the Questionnaire

1. What is your name?
2. Did the research you performed and will write about in your thesis occur at CC or at another institution?
3. Who is your research mentor/senior thesis supervisor?
4. Who is your senior thesis second reader?
5. When have you enrolled in MB499?
6. Summarize your thesis research question in 2-4 sentences.
7. What is the date for Molecular Biology Day?
8. Is there any reason that you cannot be there on Molecular Biology Day, such as graduating a semester early?

Appendix 2. Department of Molecular Biology Courses

Course number	Course name
MB100	Studies in Molecular Biology
MB101	The Science and Ethics of Genetics
MB112	Investigations in Molecular Biology
MB131	Introduction to Molecular and Cellular Biology
MB199	Research Ethics in the Sciences
MB201	Laboratory in Molecular and Cellular Biology and Genetics
MB209	Introduction to Mentored Research in Molecular Biology
MB210	Introductory Special Topics in Molecular Biology
MB230	Human Evolution
MB231	Genetics
MB244	Scanning Electron Microscopy
MB256	Mathematical Models in Biology
MB301	Special Topics in Molecular Biology
MB302	Independent Study in Molecular Biology
MB310	Advanced Cell Biology
MB315	Genomics
MB321	Microbiology: Cells, Molecules, and Infection
MB325	Molecular and Cellular Immunology
MB335	Molecular Neurobiology
MB345	Transmission Electron Microscopy
MB350	Special Topics in Laboratory Research in Molecular Biology
MB355	Laboratory in Advanced Genetics
MB360	Laboratory in Molecular Microbiology
MB365	Laboratory in Genomics
MB375	Laboratory in Advanced Cell Biology
MB397	Mentored Research in Molecular Biology Alternative Format
MB399	Mentored Research in Molecular Biology
MB401	Advanced Special Topics in Molecular Biology
MB405	Stem Cell Biology
MB410	Molecular and Cellular Virology
MB415	Developmental Neurobiology
MB425	Molecular and Cellular Biology of Cancer
MB430	Sex Differentiation
MB450	Advanced Special Topics in Laboratory Research in Molecular Biology
MB497	Senior Capstone in Molecular Biology
MB498	Advanced Mentored Research in Molecular Biology
MB499	Senior Thesis in Molecular Biology

Appendix 3. Transfer Students

All transfer credits towards the Molecular Biology major must be approved by the department; please contact the Chair of Molecular Biology as soon as possible with the courses you would like to petition for counting toward the MB major.

Transfer credits for the Molecular Biology major can only be applied once a student has officially declared the major and the student's account in Stellaris reflects that they are a Molecular Biology major.

In the situation where a student has a year of introductory biology at the college level, it is typical that course will cover the MB131 and Organismal Biology requirement. However, these still require approval by the department.

To petition for a transfer course to count, please provide the following information:

- Information about the course you wish to count towards the MB major:
 - The course number(s)
 - The number of credit hours for the course(s)
 - The official description of the course(s) from the University website
 - The pre-requisites for the course(s) and a description of those pre-requisites course(s) at that University
 - *If possible*: the textbook used or syllabus for the course(s)
 - What course(s) in the MB major you wish to satisfy with this direct enrollment course(s)

Appendix 4. Study Abroad/Away Guidelines

General Information About Studying Abroad and Away from CC:

- For more information about general CC International Studies and approved Off-Campus Programs, please visit the [Center for Global Education and Field Study](#) website.
 - **Note:** While the Center for Global Education and Field Study manages and approves all international studies and approved off-campus programs during the school year, the transfer of course credits from any accredited college/university within the U.S. during the summer is approved by the Registrar in coordination with Molecular Biology faculty to ensure the courses fulfill major requirements.
- Many students feel that the best time to study abroad is generally the junior year after taking CH107, CH108, MB131, MB201, and MB231.
- Students studying abroad may also fulfill requirements for the general education program. For example, students may complete 1 or 2 units of their language requirement (DIS offers a language-intensive option that completes CC's language requirement in one semester). If you take one unit of language abroad and that language is not offered at CC, you may fulfill your second language unit with a different foreign language.
- Course approvals can be requested through the required CC Internal Application for Study Away Approval, via SUMMIT (see the [How to Apply](#) portion of the Center for Global Education and Field Study website). The system will contact your advisor and the Registrar for electronic approval of your proposal.
- To have study abroad credits satisfy requirements for the MB major, you must be a declared MB major with a MB faculty member advisor **before** you may study abroad.
- Substituting required courses for the major must be done through a formal request in SUMMIT, or by adding a previously-reviewed course from the [Approved Course Database](#) to your SUMMIT application for study away.
 - **Note:** While MB determines which courses can apply to the MB major, other departments may independently determine if they satisfy prerequisite requirements to courses taught by those departments. Ex: An Organic Chemistry I course taken abroad is approved by MB to count for the MB major. However, it is up to the discretion of the Dept of Chemistry and Biochemistry as to whether that course is a suitable prerequisite for Organic Chemistry 2 (CH251).
- The standard credit earned for a semester-long course on many study abroad programs is 3 credit hours which transfers back to CC as 0.75 unit, however if the course has sufficient MB content, it *may* be approved to fully complete a requirement for the MB major. If receiving credit for 2 units towards the MB major, one may be an upper-level (300- or 400-level) MB elective and the other will count as a unit of elective in the biological sciences. Course approvals must go through SUMMIT.
- The [Credit Transfer](#) portion of the Center for Global Education and Field Study

website further describes policies for courses that may fulfill a General Education requirement.

Study Away Credits That Satisfy Requirements for the Molecular Biology (MB) Major

- Students can receive a ***maximum*** 2 units towards the Molecular Biology major for courses that begin with an MB designation.
- A course qualifies for a unit that satisfies a MB major requirement if:
 - The topic is appropriate for the MB major.
 - The course counts for ≥ 4 semester hours (4 semester credit hours = 1 CC unit). However, some courses with 3 semester hours (0.75 units of CC credit) *may* be approved to completely fulfill a requirement for the major.
 - The course prerequisites are equivalent to MB231 – Genetics.
 - The course is unique in your academic trajectory. Credit will *not* be awarded for courses that largely duplicate courses already taken at CC. Similarly, after returning to CC, you cannot take a largely duplicate course for credit.
 - You receive a grade of at least a C- in the course.
- Study abroad units *may* satisfy any of the following MB requirements:
 - 1 unit of 300-level lecture/discussion-based MB elective
 - 1 unit of 400-level lecture/discussion-based MB elective
 - 2 units of 300- or 400-level laboratory rich electives
 - **Note:** A mentored research project (the equivalent of 4 semester hours, or 10 hours/week, per 1 CC credit) can count towards the MB major here.
 - 1 unit of elective in the biological sciences
 - **Note:** A mentored research project (the equivalent of 4 semester hours per 1 CC credit) can count towards the MB major here.
- Study abroad units do ***not*** satisfy the following MB requirements:
 - 1 unit of MB131-Introduction to Molecular and Cellular Biology
 - 1 unit of MB201-Laboratory in Molecular and Cellular Biology and Genetics
 - 1 unit of MB231-Genetics
 - **Note:** We have granted some rare exceptions for courses that can substitute for MB131, MB201, or MB231; students should talk to MB faculty about this possibility but ideally students will have completed these courses at CC prior to studying abroad/away from campus.
 - 1 unit of MB497-Senior Capstone in Molecular Biology

Study Abroad Programs with *Potential*** for Credits that Satisfy Molecular Biology (MB) Major Requirements:**

- CC-Approved Partner Programs
 - Boston University
 - Spain – [Madrid Science Semester](#) (fall only)
 - France – [Grenoble Science Semester](#) (fall only)
 - **Note:** The Boston University **CAS BI 203: Cell Biology** course may be substituted for MB131 in the MB major.
 - Danish Institute for Study Abroad (DIS) Program
 - Copenhagen – [DIS Copenhagen](#)
 - Stockholm – [DIS Stockholm](#)
 - **Note:** In addition to standard classroom/lab courses at DIS, there are some competitive opportunities through DIS to gain [research experience for course credit](#).
 - IFSA: Direct enroll at partner universities around the world, including excellent options in the molecular and biological sciences at:
 - [University College London, England](#)
 - [University College Dublin, Ireland](#)
 - [University of Galway, Ireland](#)
 - [University of Edinburgh, Scotland](#)
 - [University of St. Andrews, Scotland](#)
 - [University of Otago, New Zealand](#)
 - [University of Auckland, New Zealand](#)
 - [James Cook University, Australia](#)
 - [University of Sydney, Australia](#)
 - [University of Melbourne, Australia](#)
 - [University of New South Wales, Australia](#)

Please see CC's [Center for Global Education and Field Study](#) website for more information on IFSA partner programs.

- [Semester in Biological Diversity](#)—University of Chicago, Marine Biological Laboratory (Woods Hole, MA; not abroad but a semester away from CC)
 - The Semester in Biological Diversity offers a range of courses, many of which meet some type of requirement for the MB major. Check Summit and/or with your advisor about which courses meet which requirements.
- Hebrew University of Jerusalem
 - Rothberg International School - [Quantitative Biology Program](#)