BioSciences
Program in Biochemistry & Cell Biology

Undergraduate Advising Information (2015-16)

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Follow BioSciences!

Website: http://biosciences.rice.edu (advising information can be found here)
Owl-Space: https://owlspace-ccm.rice.edu/portal (log on and join “Biosciences Opportunities”)
Facebook: https://www.facebook.com/BioSciencesatRice

The BioSciences department unites faculty engaged in research and teaching in a wide range of disciplines within the life sciences, creating a vibrant and diverse community of scholars. The department offers undergraduate degrees in Biochemistry and Cell Biology (BA, BS), Biological Sciences (BA), and Ecology and Evolutionary Biology (BA, BS). The BA degrees offer a rigorous biological curriculum suitable for a large number of career paths yet allow the flexibility for extended academic exploration outside of biology. The BS degrees offer greater depth in upper-level coursework and are often chosen for students pursuing advanced degrees in the future. Most BioSciences students, regardless of major, participate in undergraduate research, availing themselves of the numerous research opportunities at Rice and in the Houston community.
Introduction to the Degree Programs in Biochemistry & Cell Biology

The Program in Biochemistry & Cell Biology in the Department of BioSciences offers a broad range of courses in the biological sciences, including advanced courses in biochemistry, biophysics, cancer biology, cell biology, developmental biology, endocrinology, genetics, immunology, microbiology, molecular biology, neurobiology, plant biology, physical chemistry, and virology. Students may choose to pursue a BS or BA in Biochemistry & Cell Biology, a BA in Biological Sciences, or a Minor in Biochemistry & Cell Biology.

The Biochemistry & Cell Biology BS and BA degree paths are designed for students pursuing a wide range of careers in the life sciences, typically leading to graduate, medical, or other professional school. Both paths are designed to emphasize a broad understanding of cell biology and biochemistry, provide room for exploration anywhere in the Natural Sciences or Engineering, and culminate in one (BA) or two (BS) required 400-level capstone courses incorporating primary scientific literature, presentations, and writing.

The BA offers greater flexibility with two fewer courses (including a choice of 300-level core courses). The BS offers greater coverage and depth, with a complete 300-level core and an additional 400-level capstone course.

The Biological Sciences BA is also designed for students pursuing a wide range of careers in the life sciences, typically leading to graduate or professional school. The Biological Sciences degree incorporates elements of the Ecology and Evolutionary Biology (EEB) and the Biochemistry & Cell Biology (BCB) Programs to give students a broad understanding of the full range of biological disciplines. Although Biological Sciences majors must distribute their upper-level electives between the two programs, they have few restrictions on which upper-level BioSciences courses they select. This flexibility gives Biological Sciences students the opportunity to design a path that suits their biological interests. As the Biological Sciences BA combines coursework from both BCB and EEB programs, this major may not be combined with any other BioSciences degree (i.e., BS, BA or Minor in Ecology & Evolutionary Biology or BS, BA or Minor in Biochemistry & Cell Biology).

The Minor in Biochemistry & Cell Biology is intended for those with an interest in the life sciences but who may be majoring in other areas. This minor incorporates many of the life science core courses required for the health professions.
Biochemistry & Cell Biology Advisors

Advisors for Prospective Students, Freshmen and Undeclared Sophomores
These advisors communicate with incoming students and advise freshmen and sophomores. They are here to assist prospective majors and others such as premedical students who need specific information about our programs, lecture courses, and laboratory courses.

Dr. Beth Beason-Abmayr: 326 Anderson Biological Labs; x2535; bbeason@rice.edu
Dr. Liz Eich: 342 Anderson Biological Labs; x6144; lizmc@rice.edu
Dr. Kathy Matthews: 203 Keck Hall; x4871; ksm@rice.edu
Dr. James McNew: 713 Bioscience Research Collaborative; x3133; mcnew@rice.edu
Dr. Alma Novotny: 344 Anderson Biological Labs; x4015; novotnya@rice.edu
Dr. Dereth Phillips: (on sabbatical in 2015-16)
Dr. Yousif Shamoo: 332 Keck Hall; x5493: shamoo@rice.edu
Dr. Weiwei Zhong: W200P George R. Brown Hall; x2307; weiwei.zhong@rice.edu

Advisors for Declaring or Declared Majors
Dr. Kate Beckingham: W130 GBH; x4016; kate@rice.edu (last names beginning with A-H)
Dr. Dave Caprette: 327 ABL; x3498; caprette@rice.edu (last names beginning with I-P)
Dr. Charles Stewart: W104 GBH; x4926, crs@rice.edu (last names beginning with Q-Z)

Transfer Credit: To enquire about specific course credit or generic BIOC 390 transfer credit contact Dr. Dave Caprette (caprette@rice.edu). For Study Abroad transfer credit contact Dr. George Bennett: 813 BRC; x4920; gbennett@rice.edu

Undergraduate Program Coordinator
Mariah McClarty, mam22@rice.edu, ABL 130B

(advisor photos are in order of their contact listing below)
Getting Started in Biochemistry & Cell Biology

Courses to take first
Upper level courses in the BCB major are built on a series of fundamental courses that must be taken as prerequisites for most advanced courses. For this reason, it is important to take the following courses during your first year (or transfer in AP credit for them).

- BIOC 201
- BIOC 111 or 112,
- General chemistry and lab (CHEM 121/122/123/124)

If you are a Biological Sciences major you also will need to take:

- EBIO 202
- EBIO 213

Meeting requirements for advanced courses
Rising sophomores should note that BIOC 301, BIOC 341, and BIOC 344 are common prerequisites for advanced labs and capstone courses. It is advisable to plan ahead by deciding which upper level labs and courses interest you and determining what prerequisites you must take for those courses to be available to you. Additionally, students should consider starting with BIOC 300 before enrolling in BIOC 301, BIOC 341, and BIOC 344, particularly if you have advanced placement Biology credit and therefore did not take BIOC 201 at Rice.

Undergraduate Research Opportunities
Undergraduate research opportunities are available and highly encouraged as an important part of a thorough education in the biological sciences. The BIOC 115 Freshman Seminar in Local Biology Research is designed to introduce freshmen to the research being performed at Rice and in other Texas Medical Center institutions and is a great starting course. Undergraduates may begin their research experience even as early as their freshman year by finding and securing a research position (either on a volunteer basis or for credit through the course, BIOC 310 (course website is www.bioc.rice.edu/bioc310)). The BIOC 310 website contains advice for finding a research project and laboratories with projects available often advertise through the Biosciences Owlspace Site discussed in the next section. Be aware that prospective research advisors often prefer students who can demonstrate competence either through prior experience or completion of a laboratory course such as BIOC 111 or BIOC 211. BIOC 111 (or equivalent) is a prerequisite for BIOC 310 research. Please see instructions for BIOC 111/112/211 registration and placement exam at the following site:(http://www.clear.rice.edu/bioc111/).

Students entering their sophomore and junior years should review the requirements for BIOC 401/402/412 Honors Research and HONS 470/471 Research and plan in advance to insure you meet the criteria.
Biosciences Opportunities Owl-Space Site
On this “joinable” site we post biology-related opportunities that we encounter, both on and off campus. Examples include: information sessions, research opportunities, summer internship programs, fellowships, jobs, study abroad, etc. To join, log on to your Owl-Space account and go to “My Workspace” > “Membership” > “Joinable Sites” and select Biosciences Opportunities. Note: this site is not just for research information but also serves as a general source for major information as well.

Biochemistry & Cell Biology undergraduate research contact information for AY2015-16:
Wassim Chehab, Ph.D., Office: W226 GRB Hall, email: ewchehab@rice.edu

After 2015-16, our Inter-Institutional Liaison For Undergraduate Research will return from sabbatical and she will be the primary contact again:
Dereth Phillips, Ph.D., Instructor: BIOC 115 and BIOC 310, Office: 340 Anderson Biological Labs, email: derethp@rice.edu

Research Opportunities can be found by contacting individuals listed in the BioSciences Faculty Online Directory:

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<th>URL</th>
<th>QR code</th>
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### Comparison of some BioSciences Department majors

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<th>BCB-minor</th>
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<td>PHYS 125/126 or PHYS 101/102 or PHYS 111/112</td>
<td>PHYS 125/126 or PHYS 101/102 or PHYS 111/112</td>
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<td>EBIO 202</td>
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<tr>
<td>Labs</td>
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<td>BIOC 211 (prereq. BIOC 111 or test out)</td>
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<td>BIOC 341</td>
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<td>BIOC 341</td>
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<td>2 BIOC 400 level (≥3cr hrs ea.)</td>
<td>2 BIOC 400 level (≥3cr hrs ea.)</td>
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Acceptable substitutions:
MATH 111/112 may be substituted for MATH 101; CHEM 151 and 152 and corresponding labs may be substituted for CHEM 121 and 122 and corresponding labs; CHEM 320 may be substituted for Chem 212; CHEM 365 may be substituted for CHEM 215; PHYS 101 and 102 or PHYS 111 and 112 may be substituted for PHYS 125 and 126; CHEM 310 or CHEM 311/312 may substitute for BIOC 352.

All BCB majors must take BIOC 311 and at least one of the additional advanced laboratory courses other than a research for credit course. If desired, the third advanced laboratory requirement may be satisfied by completing: (i) BIOC 310 if taken for at least 3 credits; or (ii) HONS 470/471, if the research supervisor is from one of the biosciences departments or if the research is biological in nature and pre-approved by the student's major advisor; or (iii) honors research (BIOC 401/402/412). This substitution may be used only once regardless of the number of semesters of independent research taken.

This document was created to simplify, but not supersede, information found in the General Announcements. In the event of discrepancies, the General Announcements are to be considered the final authority on the requirements of the various majors offered in Biochemistry & Cell Biology.
Graduation Checklists for the various majors and minors

The following pages contain graduation checklists to help students keep track of their progress in their chosen minor or major.

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Revised 8/11/15

**Degree Requirements for the Minor in Biochemistry & Cell Biology**

The Biochemistry and Cell Biology minor is intended for students with an interest in the life sciences but majoring in other areas. The Biochemistry and Cell Biology minor incorporates many of the life science core requirements required for the health professions. The minor may be combined with any major except those offered by the Department of BioSciences.

### Required courses by department

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<tr>
<td>126, 102, or 112</td>
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</table>

One BIOC lecture course ≥ 3 cr hrs at the 300 level or higher

selection:  

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B.A. in Biochemistry & Cell Biology

Degree requirements starting fall 2010

Total hours required

This degree requires a minimum number of 123 credit hours (122 hours if Phys 101 is taken in place of Phys 125). This total includes 60 credit hours taken outside the major. The additional 60 hours may include course work in BIOC or other Natural Sciences or Engineering departments provided that the credit is not specifically applied toward the major. More than 123 hours may be required depending on course selection. For example, substituting 3 credit hours of Bios or Bioc 310 for a 1 credit hour laboratory course increases the required total by 2 credit hours. If Bioc 401/402/412 is taken for a total of 11 credit hours and then used to satisfy requirements for a 1 credit elective lab and a single 400 level elective Bioc course, the total hours required increases by 7.

Required courses by department

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<th>MATHEMATICS</th>
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<td>124 or 154</td>
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Elective courses

Two courses from the following list:
- Bioc 302, 344, 352

Two elective laboratory courses:
- Bioc 313, 318, 320 (Bioc 342), 393, 413, 415, 530, 532, 533, 535.

If taken for 3 or more credits, Bioc 310, or Honors 470/471, or Bioc 401/402/412 may be used to satisfy the second elective lab requirement. The research supervisor must be from the BioSciences faculty with research area in Biochemistry & Cell Biology or approved by the Dept. Chair.

*One Bioc 400 level course ≥ 3 credit hours

**Two additional courses in Natural Sciences or Engineering, 300 level or above and ≥ 3 credit hours

*Only a course listed at the 400 level since academic year 2010-2011 can be used to fill this requirement

**Natural Sciences/Engineering includes any 300-level or greater course of at least 3 credit hours from any department in the Wiess School of Natural Sciences (including BioSciences) or George R. Brown School of Engineering except independent research courses such as Bioc 310 or Bioc 400/401, which cannot be used to fulfill this requirement.

Substitutions

(1) The combined courses Bioc 401/402/412 are considered a single Bioc 400 level course AND a single lab at 300 level or higher. To count toward the major all three courses must be completed.

(2) Chem 310 or Chem 311 and 312 may be substituted for BIOC 352.

Additional notes

Students may receive credit toward the major of a maximum of 3 credits of Bioc 390 (Transfer Credit in Biochemistry & Cell Biology). A student may graduate under the requirements that were in place at the time of matriculation or in the year of graduation; requirements cannot be "mixed," however.

A double major including a B.S. and a B.A. is considered a dual degree; to earn a dual degree a student must complete 30 credit hours in addition to the hours required for the primary major.
Revised 8/11/15

B.S. in Biochemistry & Cell Biology
Degree requirements starting fall 2010

Total hours required

This degree requires a minimum number of 129 credit hours (128 hours if Phys 101 is taken in place of Phys 125). This total includes 60 credit hours taken outside the major. The additional 60 hours may include course work in BIOC or other Natural Sciences or Engineering departments provided that the credit is not specifically applied toward the major. More than 129 hours may be required depending on course selection. For example, substituting 3 credit hours of BIOC 310 for a 1 credit hour laboratory course increases the required total by 2 credit hours. If BIOC 401/402/412 is taken for a total of 11 credit hours and then used to satisfy requirements for a 1 credit elective lab and a single 400 level elective BIOC course, the total hours required increases by 7.

Required courses by department

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<th>MATHEMATICS</th>
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Elective courses

Two elective laboratory courses: selection 1: selection 2:

All biochemistry & cell biology majors must take at least two additional laboratory courses, at least one of which must be from the following list:

BIOC 313, 318, 320 (BIOC 342), 393, 413, 415, 530, 532, 533, 535.

If taken for 3 or more credits, BIOC 310, or HONS 470/471, or BIOC 401/402/412 may be used to satisfy the second elective lab requirement. The research supervisor must be from the BioSciences faculty with research area in Biochemistry & Cell Biology or approved by the Dept. Chair.

**Two additional courses in Natural Sciences or Engineering, selection 1: selection 2: **

300 level or above and ≥ 3 credit hours

*Only courses listed at the 400 level since academic year 2010-2011 can be used to fill this requirement

**Natural Sciences/Engineering includes any 300-level or greater course of at least 3 credit hours from any department in the Wiess School of Natural Sciences (including BioSciences) or George R. Brown School of Engineering except independent research courses such as BIOC 310 or BIOC 400/404, which cannot be used to fulfill this requirement.

Substitutions

(1) The combined courses BIOC 401/402/412 are considered a single BIOC 400 level course AND a single lab at 300 level or higher. To count toward the major all three courses must be completed.

(2) Chem 310 or Chem 311 and 312 may be substituted for BIOC 352.

Additional notes

Students may receive credit toward the major of a maximum of 3 credits of BIOC 390 (Transfer Credit in Biochemistry & Cell Biology)

A student may graduate under the requirements that were in place at the time of matriculation or in the year of graduation; requirements cannot be "mixed," however.

A double major including a B.S. and a B.A. is considered a dual degree; to earn a dual degree a student must complete 30 credit hours in addition to the hours required for the primary major.
Degree Requirements for the BA in Biological Sciences

The BA in Biological Sciences incorporates both Bioc and Ebio courses and is closest to a general biology major than are any of the other major fields offered by the department of BioSciences. The BA in Biological Sciences may not be combined with any other BioSciences degree (i.e. BA Biochemistry and Cell Biology, BA Ecology and Evolutionary Biology, BS Biochemistry and Cell Biology, BS Ecology and Evolutionary Biology, Minor in Biochemistry and Cell Biology, or Minor in Ecology and Evolutionary Biology).

Total hours required

This degree requires a minimum number of 127 credit hours (126 hours if Phys 101 is taken in place of Phys 125). This total includes 60 credit hours taken outside the major. The additional 60 hours may include course work in Bioc, Ebio, or other Natural Sciences or Engineering departments provided that the credit is not specifically applied toward the major. More than 126 hours may be required depending on course selection. For example, substituting 3 credit hours of Bios or Bioc 310 for a 1 credit hour laboratory course increases the required total by 2 credit hours. Completing the third Math requirement using Stat 305 adds a credit hour to the total required. Other course selections may also add to the total needed. To determine total hours needed, simply add up the total credit hours applied to the major and add 60.

Required courses by department

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BioSciences elective courses

*Three laboratory courses from the following list:
  Bioc 311, 313, 318, 320 (Bioe 342), 413, 415, 530, 532, 533, 535
  Ebio 316, 317, 319, 320, 327, 330, 335, 337, 379
  Bioc or Ebio 393

Three Ebio 300 or 400 level lecture courses, each ≥ 3 cr. hrs.

One Bioc 300 or 400 level lecture course (≥ 3 cr. hrs.)

**One course from: Bioc 302, 341, 344, or 352

One Bioc or Ebio lecture course (≥ 3 cr. hrs.)

*Only one of the advanced laboratory course requirements can be satisfied by taking any of the following:
(i) Bioc 310 or Ebio 306 if taken for at least two credits; or (ii) Hons 470/471, if the research supervisor is from the BioSciences department or if the research is biological in nature and preapproved by the student's advisor; or (iii) Bioc 412; or (iv) Bioc or Ebio 393 (laboratory transfer credit).

**Chem 310 or Chem 311 and 312 may be substituted for Bioc 352.

Additional notes

A maximum of 3 credits of Bioc 390 and 3 credits of Ebio 391 (lecture course transfer credit) can apply to this major.

A student may graduate under the requirements that were in place at the time of matriculation or in the year of graduation; requirements cannot be “mixed,” however.
**Frequently Asked Questions and Tips for Planning the Major**

"Is it better to get a BS rather than a BA?" Neither degree is "better" than the other. Graduate schools and medical schools look at your overall academic record including performance, research experience, extracurricular activities, etc. You might choose the BA degree because you want to add a double major, for example, or because you want to spend more time on undergraduate research rather than on the extra course work required for the BS.

"I want to earn a BS in BCB and double major in history. Can I do it?" Yes, but because a history major earns a BA degree you would have to meet the requirements for what we call a dual degree. A dual degree is not the same as a double major. You can major in two or more different fields simply by meeting the requirements for both majors provided that the degree earned is either a BA or BS but not both. To earn a dual degree (BA/BS) you must complete the requirements for both majors and complete at least 30 additional semester hours at Rice beyond the hours required for the first degree.

"I will complete all of the requirements for my major but how can I be sure I have my 60 hours outside the major?" All courses not specifically applied to your major field count as "outside" the major, even courses taken in the same discipline. For example, if you complete all of the course requirements listed for a BA in BCB and take a couple of extra BIOC courses, those courses count toward the additional 60 hours needed.

**I have AP Biology credit. Which BCB class should I take next? What class(es) can I take to get a better feel for the major?** Even if you receive AP credit for intro biology you should not wait to begin your introductory laboratory sequence (BCB 111, 112, 211, etc.). BIOC 300 Paradigms in Biochemistry and Molecular Biology is a 3-credit course designed for first year students with AP biology credit. BIOC 335 Molecular and Cellular Animal Physiology is also accessible to freshmen who have credit for intro biology. BIOC 115 is a 1-credit seminar that introduces students to research and researchers at Rice. Even with AP credit, we do not recommend going straight into BIOC 341 Cell Biology, as many have reported that it is too challenging for the first year of college. For more information see the section titled, “Courses Accessible to Freshmen,” in this packet.

**What’s the difference between BIOC 111, 112, and 211?** We offer two entry-level laboratory courses. BIOC 111 and 112 (1 cr. hr.) introduce fundamental methods and standard laboratory practices in biosciences. Major objectives are to prepare students who have limited laboratory experience to move on to courses that require more independent learning (including BIOC 211) and to provide students with fundamental skills that are needed to conduct independent study in a research laboratory in Biochemistry & Cell Biology. BIOC 111 and 112, if taken, should be taken in the first year. BIOC 211 (2 cr. hrs.) is an intermediate level laboratory course designed for BCB and Biological Sciences majors. Students wishing to enroll in BIOC 211 must first take BIOC 111 or 112, or pass a pre-laboratory exam (see below).

**Should I take Physics 125/126 or Physics 101/102?** Both sequences will fulfill the BCB physics requirement. PHYS 125/126 is intended for bioscience and premedical students; however, if you are also considering a major in engineering or the physical sciences, then you should take the PHYS101/102 or PHYS 111/112 series, which is required for most engineering and physical science.

**Which 300-level course is best to take first?** BIOC 300 is a great 300-level course to take first. While it is not part of the 300-level core, it will count toward your 300-level Natural Science or Engineering electives and give you a strong foundation to take additional 300-level core courses.
**Which core 300-level BCB course is best to take first (BIOC 341: Cell Biology or BIOC 301: Biochemistry)?** Of the two required core courses (BIOC 301 and BIOC 341), the order in which you take them depends on your preparation and path through the major. BIOC 301 is best taken soon after your organic chemistry experience as it builds on this knowledge.

**How do I get involved in research, and can I get BCB credit for this research?** If you perform research in a BCB program faculty lab or perform research off-campus related to cell or molecular biology, biochemistry, structural biology, genetics, or other lab-based biology, you may be able to receive credit for your research. Tips for finding research positions and opportunities for receiving credit are found in the research section of this booklet.

**I want to improve my scientific writing skills. Which courses in the BCB department have a stronger emphasis on scientific writing?** All of our introductory and advanced teaching labs have a focus on improving scientific writing through practice. Many upper-level classes are also designed to hone writing skills. In addition, FWIS 123 Frontline Biology: Stories of Discovery and BIOC 300: Paradigms will give you practice in writing about science.

**I’m a premedical student: Should I plan on getting the BCB minor since I’ll need to fulfill most of the requirements anyway?** Premedical students aren’t required to complete the BCB minor, but the minor is a good way for non-majors to build a strong science foundation and is one path to completing the natural science requirements for most medical schools.

**What's the difference between EEB, Biological Sciences, and BCB majors?** See the respective degree plans for each. In general, BCB courses feature an exploration of life from the level of the molecule to the level of the organism, whereas EEB courses start at the level of the organism and explore life through its diversity, environmental interactions, and evolutionary history. The Biological Sciences major combines the approaches of both the BCB and EEB majors.

**What is the best course schedule (which classes to take when) for someone deciding between Biochemistry & Cell Biology and Bioengineering?** The suggested courses for freshmen in Bioengineering and BCB are overlapping, but there are additional critical courses to take in your freshman year to keep on track with each major. Both majors suggest strongly that you take General Chemistry and Calculus in your first year, but BIOE freshmen should also take Physics and CAAM 210, whereas BCB freshmen should take BIOC 201 Intro Bio. Those deciding between the two majors may need to take “all of the above” their freshman year.

**What are some post-graduation options for me if I graduate with a degree in BCB or EEB (aside from medical school or grad school)?** You have many options, especially if you are not geographically limited. These include jobs in education, conservation, environmental resource management, biotechnology, science writing, science policy, scientific/medical illustration, forensic science, and many more. For additional ideas, see the following articles:

- “Career counseling: 101+ things you can do with a degree in biology”
  http://advan.physiology.org/content/31/4/323.full-text.pdf+html
- “Positions Available: No Ph.D. Required?”
  http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2008_08_15/science.opms.r0800057
- “Careers in the Biological Sciences”
  http://www.aibs.org/careers/
Tips for planning your BCB major

• First semester freshmen:
  - Take the BCB prelab exam during O-week to prequalify for the BCB lab sequence (BIOC 111 or 112 and 211). To be eligible to enroll in BIOC 111, 112, or 211, a student must have a pre-lab exam score on record. Eligible students may register for BIOC 111 or 211 on ESTHER in any semester; registration for BIOC 112 requires instructor permission. If you have never taken our pre-lab exam, then please follow the steps outlined here: http://www.clear.rice.edu/bioc111/
  - Those without biology AP credit should enroll in BIOC 201, which is a prerequisite for virtually all other biological sciences courses.

• Use the information in the General Announcements, BioSciences web site, or a checklist to help plan your degree.

• Complete all of your lower division course requirements, including all math, chemistry, and physics, introductory biology, and the introductory biology lab(s) by the end of your sophomore year.

• At times you will have to take at least two or three difficult math, physics, chemistry or biology courses in the same semester – it would be wise to take them sooner rather than later. The BS in BCB requires ten BIOC lecture courses over eight semesters, so you should aim to take at least one BIOC lecture course each semester to keep on track.

• Complete some upper division requirements before your junior year to give you more flexibility in your last two years.

• Save some "room" in spring semester senior year, in case you fall behind.

• Complete your laboratory course work before spring semester senior year in case a course that you need is full or cancelled.

• BIOC 302 is currently offered only in spring and 352 only in the fall. Most 400-level courses and some upper-level labs are taught only once per year. Please plan ahead so that you have the opportunity to take the course or courses that you want.

• BIOC 311 is a prerequisite for some BIOC lab courses, and some sections fill up fast. Please do not wait until your last semester to sign up for this course.

• As you plan your last four semesters, check that you will complete at least the minimum required hours (48) at the 300 level or higher and that you will be able to complete at least 60 hours outside of your major requirements.

• If you have had difficulty making good grades in lower division science courses then you may want to reconsider the BS degree; the upper division course work will be more, not less, challenging.

• No single course can count for more than one major requirement.

QR for online version of this advising booklet: