

**ENVIRONMENTAL  
SCIENCE** 

 **BROWARD COLLEGE**<sup>SM</sup>

[www.broward.edu/environmentalscience](http://www.broward.edu/environmentalscience)

# Student Handbook

2016-2017

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## **About the Program**

The Environmental Science Bachelor of Science program is a 2+2 program. Students enter the program with an Associate of Arts (AA) or Associate of Science (AS) degree, or 60 credits of college-level work, including the completion of 36 general education credits. Students then take 60 upper-division credits to earn their baccalaureate degree. Required program coursework includes classes in Ecology, Biostatistics, and Soil Science. Students then have the option to choose between Physical Science and Biosecurity tracks, each with their own required courses and room for electives. Classes combine theory, field work, and laboratory work.

The Bachelor of Science in Environmental Science is designed for students that wish to pursue a career as a laboratory/field technician, entry level scientist, and/or progress to a graduate degree program (MS or PhD). Students holding a BS in Environmental Science also have the option to pursue admittance into professional schools (law, pharmacy, medicine, etc.).

## **Degree Options**

### **Biosecurity**

The Biosecurity track emphasizes entomology, genetics, and other “animal” aspects of environmental science.

### **Physical Science**

The Physical Science track emphasizes geology, hydrology, and other “mineral” aspects of environmental science.

### **Dual Concentration**

It is possible to complete the degree with a dual concentration by filling the elective slots with the second program’s required courses and taking one additional course. Please note that doing the dual concentration may add additional time to degree completion.

### **GIS Certificate**

The Geographic Information Systems Certificate is a parallel certificate offered in conjunction with the Social Sciences Department. Students take a sequence of courses covering using GPS data, database material, and mapping skills to both obtain and present information. The skills are in demand by employers.

The GIS certificate can be done in conjunction with either of the tracks, although doing the dual concentration plus the GIS certificate may add additional time to degree completion.

## **Admissions**

Admission into the BS in Environmental Science program is not guaranteed simply by selecting one of the bachelor tracks in the MyBC student system. Students must formally apply and be admitted into the program.

## Admissions Requirements

Application Package Contents	Completed
Supplemental Application	
Letter of Recommendation	
Transcripts	
GPA of 2.5 or above	
Prerequisite Courses Completed With a "C" or Higher	
AA/AS/60+ credit hours, including 36 general education credits	
Be in good academic standing at previous institution	

### Application

Students wishing to apply for the BS in Environmental Science program must submit the supplemental application available at [www.broward.edu/environmentalscience](http://www.broward.edu/environmentalscience). New Broward College students, or previous Broward College students who are now inactive must apply for admission or readmission to the College and pay the relevant application fee. There is no supplemental application fee to apply for the Environmental Science program.

Students must be in good standing with their previous institution to be eligible for admission into the program.

### Letter of Recommendation

Students are required to submit a letter of recommendation from a professor, work supervisor, or someone else who knows the applicant in an academic or professional capacity. (No personal recommendations from family or friends please.) Letters can be mailed directly to the program manager or dropped off at the Science Department office, provided that the letter is in a sealed envelope from the author.

### GPA

Students must have a cumulative GPA of 2.5 for admission into the program.

### Credit Hour Requirements

Students must have either their AA/AS or 60 credit hours, including 36 general education credits to enter the BS program. State law prohibits the program from enrolling anyone with freshman or sophomore status.

### Prerequisite Courses

The program requires the completion of several specific chemistry, biology and/or geology courses for entry into the program. Students are also encouraged to take statistics before they enter the program; otherwise, they will be required to take the class in their first year in the

bachelor program. All courses must be passed with a “C” or higher. Students who have coursework from other colleges/universities may be able to transfer their credits in for both prerequisite and program coursework. Students must show a transcript (unofficial is acceptable for tentative planning) to the program manager to discuss which courses are eligible for transfer. Generally, science courses must be designated “for science majors” or similar to be accepted. General education science courses (e.g. “non-majors”) are not acceptable as prerequisite courses.

### Required Prerequisite Courses

Course ID	Course Title	Credits	Completed
<b>FOR ALL APPLICANTS</b>			
BSC2010 & 2010L	Introduction to Biology I and Lab	4	
CHM1045 & 1045L <b>OR</b> CHM1025 & 1025L <b>OR</b> CHM1032 & 1032L <i>CHM1025/L and CHM1032/L are acceptable only for students in select BC AS programs.</i>	General Chemistry I and Lab <b>OR</b> Introduction to Chemistry and Lab <b>OR</b> Chemistry for Health Sciences and Lab	4	
STA2023	Statistics ( <i>If not taken before entry into the program, Statistics must be taken in the first year of baccalaureate studies.</i> )	3	
One additional science course with laboratory—see below for accepted courses.		4	
<b>TOTAL</b>		15	
<b>FOR BIOSECURITY TRACK: One of the following</b>			
Course ID	Course Title	Credits	Completed
BSC2011 & 2011L <b>OR</b> ZOO2010 & 2010L <b>OR</b> BOT2010 & 2010L <b>OR</b> MCB2010 & 2010L <b>OR</b> ORH2527	Introduction to Biology II & Lab <b>OR</b> General Zoology & Lab <b>OR</b> Botany & Lab <b>OR</b> Microbiology & Lab <b>OR</b> Florida Flora Ecosystems Landscaping (3 credits, no laboratory)	4	
<b>FOR PHYSICAL SCIENCE TRACK OR DUAL TRACK: The following</b>			
Course ID	Course Title	Credits	Completed
GLY1010 & 1010L <b>OR</b> ESC1000 & ESC1000L	Physical Geology & Lab <b>OR</b> Earth Science and Lab	4	

## **Transcripts**

Students must submit unofficial transcripts as part of their application package. Unofficial versions can be used for tentative admission and advising purposes but official documents must be received by the application deadline for full admission and the lifting of any registration holds. Official transcripts are required by Broward College and the program is unable to remove holds or waive the requirement.

## **Application Deadlines**

The Environmental Science program admits students in fall, spring, and summer semesters (August, January, and May, respectively). Application packages must be fully submitted by August 1 for fall admission, December 1 for spring admission, and May 1 for summer admission.

## **Admission Status**

Applicants are contacted via email about their admission status. The program will use the email address provided on the supplemental application to contact applicants.

### **Full Admission**

Students who have completed all required coursework and credit hours and have submitted all their documentation are eligible for full admittance into the program.

### **Tentative Admission**

Tentative admission can be offered to students who are within one semester of completing their credit hours or prerequisites. For example, students may apply over the summer for winter admission, using the fall term to finish any necessary coursework. Admission will convert to full admission once grades post if the requirements are met.

### **Conditional Admission**

At the discretion of the program manager, students may be conditionally admitted to the program for one semester. Conditional admission usually requires the successful remediation of a course that is lacking or attainment of a particular GPA. Students accepted on a conditional basis will be informed of this status and given specific details about what they must do to be fully admitted.

### **Denied Admission**

Students who are lacking the required credit hours and/or prerequisite courses and are more than one semester away from attaining them will be denied admission. Students are always welcome to reapply once they meet the necessary requirements.

## **Graduation Requirements**

To graduate with a Bachelor of Science in Environmental Science, students must have:

- Completed at least 120 total credits (not counting any college-prep/developmental or other non-credit status courses)

- Completed at least 25% of the baccalaureate level credits in residency at Broward College
- Completed all general education requirements, including foreign language requirements
- Completed all required Environmental Science core courses
- Completed either an internship or independent study
- Completed all Environmental Science elective requirements
- Maintained a GPA of at least 2.5
- Fulfilled all obligations to the College (all fees satisfied, all materials returned, etc.)

More details are available through the MyBC student audits.

## **Life in the Environmental Science Program**

### **Advising and Educational Planning**

Students can meet with the program manager and/or coordinator to formulate an educational plan to include the electives and internship/independent study options to best fit their specific goals. Students are also encouraged to become familiar with the program materials, which include the required courses and available electives.

Questions about substitutions, waivers, and exemptions must be brought to the program manager before any action is taken. Students are strongly advised not to alter their schedules without contacting the program staff first.

### **Registering For Classes**

Environmental Science courses are restricted to students admitted to the program. Students in the program will receive emails from the program containing information about registration.

For courses held at the University of Florida, the program's partner school, there are additional steps to be taken to register. The department will provide detailed instructions about how to register as a transient student, including how to have the UF credits count in BC credit load for financial aid purposes. Please note that different deadlines and fees apply for UF courses.

For information about available courses, see the program manager or coordinator.

### **Course Rotation**

Currently, the program rotates courses every semester and the selection will vary (i.e. a course offered the fall will likely not be offered in the winter and vice versa). Students should keep in mind that if they decline to enroll in a particular course, they may need to wait another academic year before it is offered again. A mixture of program core, track core, and electives are offered each major term. Selected courses are offered during summer semesters.

Internships and Independent Studies are available each semester.

### **Progressing Through the Environmental Science Program**



Students in the Environmental Science program are expected to make progress towards their degree by consistently taking program courses, including at least 1 3/4000 level course per academic term, and maintaining an upper division GPA of at least 2.5. Students are welcome to take classes on a full-time or part-time basis as their schedules and finances allow but are expected to make progress towards degree completion. Taking classes outside of the program (GIS courses are considered in-program) will delay graduation and possibly exhaust financial aid eligibility.

### **Probation**

Students whose GPAs fall below 2.5 or who do not adhere to College and department policies will be placed on Probation. Students will be notified via email of being placed on probation. The student will need to meet with the program manager to formulate a plan to correct the deficiency. Students will have 1 major academic term (fall or spring) to bring their GPA up. Failure to do so will result in being dismissed from the program.

### **Withdrawals**

Any required class that is withdrawn from (with the exception of College-sanctioned withdrawals [e.g. medical withdrawals, military deployment, etc.]) must be retaken when the class is next offered. Excessive frequency of withdrawals will be seen as in violation of the academic progress requirement.

Students needing to withdraw from a class after the add/drop period must withdraw from the course through their online student accounts or speak to BSES program staff. Students who stop attending class will *not* automatically be withdrawn and risk an “F” on their transcripts.

Students considering withdrawing from any courses should contact the Financial Aid office first to discuss potential changes to aid status or eligibility.

Students should also keep in mind that withdrawals on their transcripts may be viewed unfavorably by graduate and professional school admissions committees. Students should consider possible alternatives (requesting assistance from the professor, utilizing the tutoring services, etc.) before making the decision to withdraw from a course.

### **Dismissal**

Students who decline to enroll in any program courses or withdraw from all their program courses without making prior arrangements with the program manager/coordinator will be removed from the program. Any student who fails their third (3<sup>rd</sup>) attempt at a required course will be dismissed. (Withdrawals are considered attempts per College policy.) Students who do not respond to attempts to contact them will also be dismissed.

Dismissed students will be notified via email.

### **Broward College Policies**

The Environmental Science program follows all Broward College policies and procedures. All policies and procedures are available on the [BC website](#).

### **Add/Drop Period**

The Environmental Science program honors all College-wide time periods and deadlines, including Add/Drop. The exact dates are published on the [BC Calendars page](#) for each academic term and session. Students are responsible for dropping unwanted courses within the allotted timeframe.

### **Adding Classes After Add/Drop**

Students must have written permission (note or printed email) to be admitted into the class. Students must bring the permission to the Science offices and the program coordinator will enter them into the class. Students should *not* go to Registration.

Lab classes are not eligible for override—the seat capacity is determined by fire code and other safety regulations.

Students must have written permission to enter a class or lab after it has met, regardless of open seats.

### **Attendance**

Environmental Science students are subject to Broward College's attendance policies. Students who do not attend their first class or lab may be dropped from the course and any applicable co-requisite course (i.e. lecture and lab). Students who stop attending will not be automatically withdrawn by faculty and risk an "F" on their transcripts.

### **Boats**

The Environmental Science owns three boats—one 16 foot Diamondback airboat, one open boat, and one 16 foot SeaNymph. The boats are used for student research trips and field work. Typical destinations include Lake Okeechobee and Iron Pot Hammock.

Students are not permitted to drive/operate the boats by College policy.

### **Books/Materials**

Books, lab manuals, and other required materials will be available through the Central Campus bookstore or through the [bookstore website](#). In case of any issue regarding textbooks or materials please contact the Environmental Science department.

### **Course Load**

Students are not required to be full-time and there is no minimum credit load per semester requirement. However, at least 1 3/4000 level course must be taken each major academic term (fall and spring) to remain in good standing in the program. Students are encouraged to take the classes that they will be able to regularly attend and devote ample time to. Exceptions include lectures which have co-requisite laboratory courses. Courses which require both lecture and lab must be taken concurrently.

Questions about minimum load for financial aid or scholarship eligibility should be directed to the Financial Aid, Veteran's and/or Scholarship Offices.

### **Clubs/Student Organizations**

Students are encouraged to join extracurricular clubs and activities. Students wishing to start a new club or organization can receive guidance from Student Life.

Currently, the Science Department has several clubs for students, including:

Eco-Creator Flow (Faculty advisor: Dr. Serrano)

Pre-Pharmacy Club (Faculty Advisor: Dr. Choudhury)

Pre-Med Club (Faculty Advisor: Dr. Lawry)

The full list of student clubs and activities is available online on the [Student Life webpage](#). Bachelor students are welcome to join any of the activities and events put on by Student Life.

### **Emergencies**

In the case of emergencies (hurricanes, fires, unexpected closures, etc.), Broward College utilizes several systems to reach students, including messages on the website, text messages, and automated phone calls. Students are strongly advised to keep their contact information current so that they receive emergency messages. Students can update their contact information through their MyBC student accounts.

### **Financial Aid**

Students are advised to speak directly with the Financial Aid, Veteran's and/or Scholarship Offices for specific information about aid eligibility and availability. The Environmental Science department does not have access to student aid information.

### **Grades**

The Environmental Science program follows Broward College's grading standards, appeals processes, deadlines, and all other policies and procedures. The policies and procedures can be viewed on the BC website.

### **Independent Studies**

Independent Studies (BSC4911 and PSC4912) are available to students with the permission of faculty. Faculty members help to identify a suitable project for the term and provide supervision of the project.

Please note that tuition and fees apply to independent study courses.

## **Internships**

An internship (BSC4948 and PSC4948) is required as part of the Environmental Science curriculum. A variety of sites is available to choose from. Students are also welcome to apply for internships at private sites, government internship programs, and other opportunities. Check the bulletin board outside of room 7/140 for a selection of internship opportunities. Please see Dr. Serrano for site placement and additional information.

For a 3-credit course, 144 hours of work are required, as well as the completion of an internship journal. Please note that tuition and fees apply to internship courses.

## **Jobs**

The Environmental Science program does not guarantee employment or offer job placement services. As a courtesy, the program forwards job announcements and opportunities to students via email and postings on the bulletin board outside of 7/140. However, students are responsible for their own applications or inquiries.

## **Lab Attire**

If lab coats, googles, closed-toe shoes, or other protective attire is required for labs, students will be informed, typically in the course notes, upon registration.

The department does not have extra coats or googles to lend.

## **Non-Program Students**

Class seats in 3/4000 level courses are reserved primarily for Environmental Science BS students. Students who are not admitted to the program who wish to take a class should contact the program coordinator.

## **Research Lab**

The Research Lab (7/212) is equipped with several computers, whiteboards, selected laboratory equipment, and provides a place for BSES students to collaborate, study, conduct research, and use available software.

ArchGIS is available on two computers in the lab. Priority use of those machines goes to students needing the software. Standard MS Office software is available on all terminals.

Access to the Research Lab is via keycard. See the program coordinator to sign out a keycard. Keycards are not to be kept overnight. Program staff reserves the right to deny access or use of the lab. Keycards that are lost will result in the suspension of lab privileges.

## **Scholarships**

Scholarships are available through Broward College's [Scholarship Office](#). The application window typically opens in May (please see their website for exact dates) for the coming academic year. Students need to create an account/profile, indicate that they are bachelor-seeking students, and provide any other requested documents. The Scholarship Office will contact them directly with specific information and instructions.

## **Special Events**

Environmental Science students are occasionally offered the opportunity to attend special events, including professional conferences and site tours, workshops, or to appear in publicity materials or to represent the program. Students will be contacted with specific details about events and opportunities.

## **Student Resources**

Bachelor students are welcome at all events put on by Student Life and to use all facilities and resources that are available, including the gym, computer labs, counseling, clubs, etc. A full list of resources is available through the [Student Life webpage](#).

## **Student Research Trips**

BSES students will have the opportunity to participate in local department trips. Trips range from a few hours to a weekend. Students will be notified by the program manager about upcoming trips and will be able to sign up to go. For selected trips, a nominal fee may apply to defray expenses (e.g. fuel, food). Program staff will provide details as necessary.

## **Study Abroad**

BSES students will also have the opportunity to participate in Study Abroad trips. Trips are faculty led and typically 10-16 days in length and take place during Spring Break or during the summer. Destinations include Peru and the US Pacific Northwest and Canada. Coursework is tied into the program and registration into specific courses is required. The courses vary by trip and can include Independent Research, Field Techniques, or other relevant options.

Fees vary by trip but approximately \$3,000 is a rough estimate for most trips, which includes travel, lodging, at least some meals, and excursions. Class tuition, fees, books, passport fees, required immunizations (if any), etc. are not included in the estimate. Specific information is made available with the announcement of trips.

Study Abroad trips are not required of students (any courses linked to study abroad will also be offered on-campus) but participation is strongly encouraged. The Environmental Science program has never had a student regret taking part in Study Abroad.

## **Transient Status**

As part of the BSES program, students take selected courses at the University of Florida, typically at the Ft. Lauderdale location, located directly across the street from Central Campus on College Avenue.

BSES and UF staff are available to provide assistance in applying and registering for correct courses.

Students are requested to regularly check their UF email and student accounts. UF communicates through these channels and as transient students, the BSES students are bound to UF's policies and procedures. BSES staff do not have any access to student accounts, fees owed, or any internal UF student communications.

## **Textbooks**

The department will provide textbook information as soon as possible for the next semester. Students are encouraged to shop around for the best deal on textbooks and supplies. All books will be available in the BC Bookstore (run by Barnes and Noble). Most books are also available from other stores and online dealers, often at a significant cost savings. If there is any question about whether a previous edition or other variation is acceptable, the student should contact the specific professor teaching the course.

## **Tutoring**

Tutoring for selected BSES courses is available in the STEM Center. The STEM Center is located in the University/College Library on Central Campus (building 17). Tutoring is on a drop-in basis subject to tutor availability. See the STEM Center for specific hours for BSES material tutors. Students are requested to bring their textbook as there are no extra copies in the Center.

Additional tutors and resources for other BSES courses is in progress. More details will be provided when they are available.

At times, the STEM Center will provide strong students the opportunity to become a paid tutor for a subject area. The department and STEM Center will provide details as required.

## **Information Technology**

Students are provided with the opportunity to download software and access cloud storage as part of their student accounts.

## **D2L**

Courses which are blended use D2L for the online component. Access to D2L is made available after students pay the tuition and fees owed for the course and the instructor opens the course. Courses which are blended are indicated on the schedule.

## **BSES D2L**

The BSES program has a D2L shell that will be made available to students. Announcements, important documents, and other items will available there. Students will also have access to discussion boards and student emails to communicate with classmates.

Students are given access by program staff.

## Contacts

<b>Phone Numbers</b>	
<b>Environmental Science Department</b>	954-201-6733
<b>Academic Support Center (formerly Learning Resource Center)</b>	954-201-6660
<b>Admissions (for residency classification, name changes, etc.)</b>	954-201-6800
<b>Financial Aid</b>	954-201-2330
<b>STEM Center (tutoring)</b>	954-201-6660
<b>University/College Library</b>	954-201-6648
<b>Veteran's Office</b>	954-201-7200
<b>University of Florida FLREC (Davie campus)</b>	954-577-6371

## Course Rotation and Faculty Members

<b>Instructor</b>	<b>Email</b>	<b>Courses Taught</b>	<b>Course Rotation</b>
David Serrano	<a href="mailto:dserrano@broward.edu">dserrano@broward.edu</a>	PCB4043 Introduction to Ecology	Fall, Spring
		AL4163 Challenges in Plant Resource Protection	Fall, Spring
		ENY3005 Principles of Entomology	Fall
		EVR2930 Environmental Science Seminar	Fall, Spring
		EVR2949 Co-op Internship	As needed
		BSC4948/BSC4911 Senior Internship/Senior Research	As needed
		PCB4341C Advanced Field Techniques	Summer

<b>Instructor</b>	<b>Email</b>	<b>Courses Taught</b>	<b>Course Rotation</b>
Idelisa Ayala	<a href="mailto:iayala@broward.edu">iayala@broward.edu</a>	PCB3063 Genetics	Fall, Spring
		PCB3023 Cellular/Molecular Biology	Fall, Spring
Lisa Burgess	<a href="mailto:lbjurgess@broward.edu">lbjurgess@broward.edu</a>	PCB3063 Genetics	Fall
Laura Choudhury	<a href="mailto:lprecedo@broward.edu">lprecedo@broward.edu</a>	BCH3033 Biochemistry I	Fall, Spring
Jessica Digirolamo	<a href="mailto:jdigirol@broward.edu">jdigirol@broward.edu</a>	PLP3002C Fundamentals of Plant Pathology	Spring
		ORH2527 Florida Flora and Ecosystem Landscaping	Fall
Kevin Carter	<a href="mailto:Kcarter1@broward.edu">Kcarter1@broward.edu</a>	EVR1858 Environmental Regulations	Spring
Liz Barraco	<a href="mailto:lbarraco@broward.edu">lbarraco@broward.edu</a>	PCB4341C Wildlife Ecology	Fall
Michael Harvey	<a href="mailto:mharvey@broward.edu">mharvey@broward.edu</a>	PCB44454C Biostatistics with Lab	Spring, alternate Fall
		ZOO4234/L General Parasitology/Lab	Alternate Fall
Pamela Fletcher	<a href="mailto:pfletche@broward.edu">pfletche@broward.edu</a>	BSC4846 Scientific Communication	Fall, Spring
		GLY4746 Global Environmental Change	Fall
Shakira Khan	<a href="mailto:Skhan3@broward.edu">Skhan3@broward.edu</a>	GLY4203 Environmental Geology	Fall
Susan Frandsen	<a href="mailto:sfrandse@broward.edu">sfrandse@broward.edu</a>	OCE3008 Advanced Oceanography	Fall
Terrie Bates	<a href="mailto:tbates@broward.edu">tbates@broward.edu</a>	SWS2242C Wetlands Management	Fall



<b>Instructor</b>	<b>Email</b>	<b>Courses Taught</b>	<b>Course Rotation</b>
Valerio Bartolucci	<a href="mailto:vbartolu@broward.edu">vbartolu@broward.edu</a>	GLY4825/L Hydrogeology/Lab	Spring
		GLY4731 Coastal and Marine Science	Fall
Vanessa Hormann	<a href="mailto:vhormann@broward.edu">vhormann@broward.edu</a>	PCB3063 Genetics	Summer
		PCB3063L Genetics Lab	Fall, Spring
Jay Muza	<a href="mailto:jmuza@broward.edu">jmuza@broward.edu</a>	PSC4911 Senior Research	As needed
David Finneran	<a href="mailto:Dfinnera@broward.edu">Dfinnera@broward.edu</a>	MET4700 Atmospheric Processes	Spring
Alon Parker	<a href="mailto:Aparker1@broward.edu">Aparker1@broward.edu</a>	GIS courses	Fall, Spring, Summer
April Watson	<a href="mailto:Awatson1@broward.edu">Awatson1@broward.edu</a>	GIS Courses	Fall, Spring, Summer