

Science Education Program
Department of Mathematics and Science Education

How do I gain certification to teach secondary science? The information below is intended to answer this question, but remember that you must select one science area (from among biology, chemistry, physics, and earth/space science) as your area of specialization. More information about course requirements in science is offered later in this document. In addition you must complete the program through either the UGA main campus or the UGA Gwinnett Campus.

Note: Secondary science certification is preparation for teaching science in grades 6 through 12. This is a subject matter specific certification and is not the same thing as Middle Grades certification.

Secondary Science Certification

at the UGA main campus

Step 1 - Gaining admission to the science education program at UGA to pursue certification

Undergraduate students – If you wish to learn about the nature and amount of coursework required to pursue a BSED degree program in science education, you may contact Dr. Steve Oliver at 706-542-1763 or soliver@uga.edu for an initial consultation or you can examine the advising sheets for each of the four subject matter areas in which certification is offered. Click on the name of the subject matter area to see the advising sheet: biology, chemistry, physics, earth/space science. However, in order to be admitted to the degree program, you must contact the Student Services Office in Room 122 Aderhold Hall (<http://www.coe.uga.edu/students/>) prior to being admitted and formally advised in the Science Education Program. (See undergraduate programs information at <http://www.coe.uga.edu/mse/science/programs/undergrad.html>) Undergraduate advisement for the science education undergraduate program will be conducted by the staff in the Office of Student Services.

There are certain entrance requirements that must be met prior to full admission to the science education program. These entrance requirements include: (1) Completion of the General Education requirement in the BSED program; (2) Passing score [or exemption] on GACE Basic Skills I; (3) Overall GPA of 2.50 required for admission to science education courses; (4) Completion of *CHEM 1211*, *CHEM 1211L*, *CHEM 1212*, *CHEM 1212L*, and *MATH 2200*, *MATH 2200L* with a grade of "C" or better. NOTE: A grade of "C" or better must be obtained in all content specialization courses for teacher certification. Receiving a grade of C- (C minus) is NOT satisfactory.

Graduate students - Call the Science Education Program (706-542-1763), stop by the Office (212 Aderhold Hall), or send email to schedule an initial consultation meeting with the Graduate Coordinator, Dr. David Jackson, djackson@uga.edu. At this initial meeting, you will have an opportunity to discuss your interest in science teaching and to confirm that you have met (or will meet) the entrance requirements for admission to Science Education as a Master's degree or Non-Degree student.

In order to take course work toward certification and/or a graduate degree, you must be admitted to the UGA Graduate School (<http://www.gradsch.uga.edu>). Contact the Graduate School to obtain an application and information regarding related requirements. (See masters programs information at <http://www.coe.uga.edu/mse/science/programs/masters.html>). You may apply as either a master's degree or non-degree student. Make the decision as to which is best for you in consultation with the science education program faculty.

Step 2 - Admission to Science Education

For *undergraduate students* to attain admission to the science education program, you should download the *Admission form* from this website and complete it. Please return the completed form either electronically or printed to Ms. Valerie Kilpatrick (valkil@uga.edu) in Rm. 105 Aderhold. The application form is required for securing the Permission of Department (POD) for admission to the Block I courses in Science Education. For *graduate students* your admission to graduate school is sufficient, you do not need to specifically apply for admission to the program. *The other issues covered in this section apply to graduate students just as they do to undergraduate students.*

Next you must complete a criminal background check. You do this by making application to an off-campus firm that completes this process. Faculty and staff of the University of Georgia are NOT informed of the results of the background check. When a student teaching or practicum placement is requested for you at a specific school, a copy of the criminal background check will be forwarded to that school as part of their information packet about you. You can learn more about the process for completing the criminal background check at: <http://www.coe.uga.edu/students/admission.html>

Next, please read the information on the Field Experience website regarding student teacher liability insurance. <http://www.coe.uga.edu/students/liability.html>. You are covered for liability insurance when participating in any practicum or student teaching experience that is part of a science education course. The coverage, provided by the state of Georgia, is for \$1 million of liability coverage. (NOTE: *If you are placed in a non-public school, or in a school not in Georgia, you will not be covered by this insurance.*). Other liability insurance policies are available from professional organizations for teachers such as Professional Association of Georgia Educators (PAGE) or its student affiliate (SPAGE). Insurance from these professional organizations may provide additional coverage. Investigate these options at both the website named above as well as the websites of the professional organizations listed on that page.

GACE basic skills

You must also fulfill the GACE basic skills examination requirements prior to admission to the Science Education (ESCI) courses. For more information examine the website at: <http://www.gapsc.com/documentation/basicskillsinfo.asp>

The Basic Skills assessment is designed to assess knowledge and skills in the areas of reading, mathematics, and writing. The assessment is composed of three tests—the reading and mathematics tests each consist of selected-response questions; the writing test consists of selected-response questions and a constructed-response assignment.

Students may exempt the GACE basic skills assessment based on scores from the SAT, ACT, or GRE tests. Sum your verbal and mathematics scores – there is no minimum verbal or mathematics score. If the sum of those composite scores is above the following minimum scores then you are exempt from GACE basic skills:

- SAT exemptions: minimum combined verbal and mathematics score of 1000
- GRE exemption: minimum combined verbal and quantitative score of 1030
- ACT exemption: minimum combined English and mathematics score of 43.

Step 3 - Advisor Assignment

Undergraduate students: You will be advised in the Office of Student Services.

Graduate students: When you are admitted by the Graduate School you will be assigned an advisor in Science Education. You will receive official notification of acceptance from the Graduate School, but you will also subsequently receive a letter from the Department of Mathematics and Science Education regarding your admission and your advisor assignment. The advisor will work with you to design a plan and maintain progress toward completion of either the degree or certification (see <http://www.coe.uga.edu/mse/science/programs/index.html>). You should meet with your advisor on a regular basis. You may make appointments by telephone or through email correspondence.

Step 4 - Completion of Pre-Professional Experience and Admission to Block I

The Block I courses are the first formal educational experience in the Science Education program for students seeking teacher certification. These courses are offered in both fall and spring semester. In order to take the Block I courses, a student must have completed most of the science subject matter content courses required for their degree or certification requirements. Some of these courses may be taken concurrently with Block I courses. Typically admission to the Block I courses will be denied if there is more than one science course that is required for certification that has to be completed after Block I.

Prior to admission into the Block I courses you must submit the form labeled *Statement of Completion of Pre-Professional Experience with Children* and an essay described

therein. The purpose of this requirement is to ensure that all prospective teachers have had some experience in formal education settings working with children. This essay will be read by the secondary science faculty when they are making the admission decisions for the Block I courses. The form and essay are to be submitted to Ms. Etta Roberts in Room 212 Aderhold. [Statement of Completion of Pre-professional Experience with Children](#)

Step 5 - List for Block I

Upon turning in your materials (Admission to Science Education, Criminal Background check, *Statement of Completion of Pre-Professional Experience*) you should request that Ms. Etta Roberts add your name to the list of students wishing to enter the Block I courses for the upcoming semester. This action will place your file among those that will receive committee review and consideration for admission into Block I.

Step 6 - Registration for courses in Block I

During pre-registration, you will be notified of your admission to enroll in the Block I courses. Enrollment in Block I courses is by Permission of Department (POD). If permission to enroll is not granted at that time, you will be notified of how to meet the requirements for admission to Block I. If you are completing the science education certification through the UGA main campus, you must take all of the courses within a block at one time. The courses for Block I include: ESCI 3450, 4450/6450, and 4460/6460. The courses for Block II include: ESCI 5460/7460, 5470/7470, and 5480/7480.

Important Note for Master's Degree Students

Under certain circumstances, course credit taken for certification can apply to the master's degree program of study. Students may be allowed to count 3 courses (or 9 semester hours) that are taken to fulfill certification requirements toward the requirements of the master's degree. These course must be taken for graduate credit (6000 level and above), but may NOT include ESCI 6450, 6460, 7460, 7470, and 7480). Courses that may count include: ESCI 6030, ESCI 6480, EDIT 6150, EPSY 6010, and EPSY 6800. (NO student will take more than three courses from this list – there may be other courses that when taken for graduate credit may count toward the requirements for both secondary science certification and for the M.Ed.)

Step 8 - Registration for courses in Block II

During your Block I enrollment you will be requested to complete forms to indicate placement preference with regard your Block II student teaching/internship. Enrollment in Block II courses is by Permission of Department (POD). Notification of the school site for these placements is done by email from the Educational Field Experiences Office in Aderhold Hall.

Step 9 – Other tasks to be completed

During or before your Block II internship you should also plan to sit for the appropriate GACE Content Assessment. See the Georgia Assessments for the Certification of Educators website for additional information - <http://www.gace.nesinc.com/>. You must choose the appropriate GACE content assessment for your certification. Contact program faculty in science education if you need assistance in determining which GACE assessment is correct for the certification you are completing. The GACE assessment in each of the four science areas requires that you take both a content knowledge and content essays test. NOTE: The science education program does not offer broad field science certification, but students who are working toward Earth/Space Science certification take the Science GACE test. In all other science certification areas, prospective applicants for certification must take the subject specific GACE test (Biology, Chemistry, or Physics).

Other Information

The College of Education has the following policies related to being eligible to receive a student teaching/internship assignment (<http://bulletin.uga.edu/bulletin/ind/edu5.html>). A student must:

- have at least a 2.5 overall grade point average;
- have completed the prerequisite education courses related to the major with a grade of at least C in each (courses in curriculum and teaching procedures must have been taken on this campus);
- have completed essentially all required courses in the content specialization with a grade of at least C (a C minus is not sufficient) in each;
- make an application for a student teaching placement through the Educational Field Experience Office by the end of the first week of classes in the semester preceding the student teaching/internship semester;
- have completed the form provided by the science education program faculty regarding hindrances to placement and desired sites for school placement;
- have successfully completed the school practicum during Block I;
- be in satisfactory personal health to assume responsibility in student teaching; and
- have completed a criminal background check.

NOTE: A student is not permitted to student teach while on court ordered probation.

**Professional Education Courses Required
for
Secondary (6-12) Science Certification**
(Athens main-campus program)

Department of Mathematics and Science Education
212 Aderhold Hall
706-542-1763

In order to be recommended for certification in one of the secondary science areas, professional education coursework in the following areas must be completed:

One 3 semester hour course in Education Psychology

EPSY 2130 Exploring Learning and Teaching

or

EPSY 6010 Foundations for Human Development

or

EPSY 6800 Cognition in the Classroom

One 3 semester hour course in Special Education

ESCI 4030/6030 Teaching Science to Students with Special Educational Needs

or

SPED 2000 Survey of Special Education

One 3 semester hour course in Instructional Technology

ESCI 4480/6480 Technological Capabilities for Science Teaching

or

EDIT 2000 Introduction to Computers for Teachers

or

EDIT 6150 Introduction to Computer Based Education

Three science education courses – 9 semester hours - taken together as “Block I”

ESCI 4450/6450 Science Curriculum and Learning 3 hrs.

ESCI 4460/6460 Methods of Science Teaching 3 hrs.

ESCI 3450 Practicum in Science Education 3 hrs.

A full semester of experiences – 17 semester hours – taken together as “Block II”

ESCI 5460/7460 Science Education School-Based Internship 11 hrs.

ESCI 5470/7470 Reflection on Science Teaching 3 hrs.

ESCI 5480/7480 Philosophy and Leadership in Science Classroom Practice 3 hrs.

NOTE: Prior to taking the Block I courses, a passing score (or exemption) on the GACE Basic Skills is required. A passing score on both the content knowledge and content essays for the appropriate GACE Content Assessment must be attained prior to being recommended for certification.

Science Content Coursework required for secondary science certification

Science subject matter coursework equivalent to at least 8 courses in the major science area are required in order to be recommended for certification. Coursework is required in the following science areas for each of the following majors:

BIOLOGY (four out of five areas required)

biochemistry/molecular biology
genetics/evolution
natural history/ecology
anatomy/physiology
cellular biology/developmental biology

EARTH SCIENCES

mineralogy/petrology
paleontology/stratigraphy
atmospheric/oceanic science
astronomy

CHEMISTRY

quantitative/qualitative analysis
physical chemistry
biochemistry
organic chemistry

PHYSICS(four out of five areas required)

mechanics
electricity and magnetism
thermodynamics
waves/optics
modern physics

A typical program

Each academic year Block I and Block II will be offered each semester. All courses listed for a given block must be taken together. Block I must be taken prior to Block II.

Summer

EPSY 6010
EDIT 6150

Fall

Block I
science subject matter
SPED 2000

Spring

Block II

NOTE to current or prospective graduate students:

Up to 3 courses (9 semester hours) can count for both initial certification and on a M.Ed. degree program of study. However, a student cannot use ESCI 6450, 6460, 7460, 7470, or 7480 for credit within a M.Ed. degree program of study.

Science Education *at the UGA Gwinnett campus*

Secondary Science Certification

The secondary science certification program at the UGA Gwinnett campus differs from the secondary science certification program at the UGA main campus in several important ways. This program is known by the acronym PACSS – it stands for Program of Alternative Certification in Secondary Science. Most of the individuals who are seeking certification through PACSS are employed by a school district. Thus the courses for certification are offered in the evenings and summers. Consider the following example:

An individual decides that he/she wishes to become a secondary science teacher in the schools of the region of Georgia around the northern or eastern suburbs of Atlanta. This individual has a bachelor's degree in a science field from an accredited college or university. The person learns of the UGA – Gwinnett Campus program for secondary science certification and contacts Dr. Baldwin. If this individual makes the decision to pursue entry into a science education certification program through the UGA Gwinnett campus, four activities begin to happen at this time. These activities are all essential. First, the individual makes application for admission to the UGA science education graduate program as either a non-degree or master's degree student. Second, the person registers to take the appropriate GACE subject matter field assessment for their science specialty. Third, the individual fills out applications for employment with school districts. Fourth, upon employment, the individual provides needed information to the school district so that the district can complete an application for this individual to receive a non-renewable secondary science teaching certificate.

Upon notification of admission into the certification program, the individual registers for classes based on the advice of their advisor. The following pages will provide detailed information on how to complete the steps for entry into the science certification program and will include description of the UGA course requirements to be eligible for recommendation for certification.

Step 1 - Initial Consultation for the PACSS program(Program of Alternative Certification in Secondary Science)

Undergraduate students – There is not an undergraduate option for seeking secondary science certification at the UGA Gwinnett Campus.

Graduate students – For information you can contact science education program faculty at either the UGA main campus or at the UGA Gwinnett Campus. Dr. Paul Baldwin (pbaldwin@uga.edu or 678-985-6781) is located at the Gwinnett Campus. The Science

Education Program office (mse@uga.edu or 706-542-1763) can also provide information or send email to schedule an initial consultation meeting with the Graduate Coordinator, Dr. David Jackson, (djackson@uga.edu).

At the initial meeting, whether you meet with Dr. Baldwin or Dr. Jackson, you will have an opportunity to discuss your interest in science teaching and to confirm that you have met (or will meet) the entrance requirements for admission to Science Education as either Master's or Non-Degree student. These requirements include but are not limited to the following: passing score or exemption on the GACE basic skills assessment, having a minimum of a 2.5 overall grade point average in ALL college courses taken, and having a minimum grade of C in all content science courses that will count toward certification. (If you are meeting with Dr. Jackson, ensure that he is aware of your specific interest in the PACSS program.)

Step 2 - Gaining admission to the science education program at UGA to pursue certification through the PACSS program

Graduate students- In order to take course work toward certification and/or a graduate degree, you must be admitted to the UGA Graduate School (<http://www.gradsch.uga.edu/>). Contact the Graduate School to obtain an application and information regarding related requirements. (See masters programs information at <http://www.coe.uga.edu/mse/science/programs/masters.html>). You may apply as either a master's degree or non-degree student. Make the decision as to which is best for you in consultation with the science education program faculty.

Step 3 – Requirements that must be completed

You must complete a criminal background check. (If you are employed by a school district, check with their personnel office regarding whether a criminal background check is required for employment.) You do this by making application to an off-campus firm that conducts this process. Faculty and staff of the University of Georgia are not informed of the results of the background check. When a placement for you is requested at a specific school, a copy of the criminal background check will be forwarded to that school as part of their information packet about you. You can learn more about the process for completing the criminal background check at: <http://www.coe.uga.edu/students/admission.html>

NOTE: A student is not permitted to register for the school-based internship while on court ordered probation.

Next, please read the information on the Field Experience website regarding student teacher liability insurance. <http://www.coe.uga.edu/students/liability.html>. You are covered for liability insurance when participating in any practicum or student teaching experience that is part of a science education course. The coverage, provided by the state of Georgia, is for \$1 million of liability coverage. (NOTE: If you are placed in a non-public school, or in a school not in Georgia, you will NOT be covered by this insurance.).

Other liability insurance policies are available from professional organizations for teachers such as Professional Association of Georgia Educators (PAGE) or its student affiliate (SPAGE). Insurance from these professional organizations may provide additional coverage. Investigate these options at both the website named above as well as the websites of the professional organizations listed on that page.

GACE basic skills

You must fulfill the GACE basic skills examination requirements prior to admission to the Science Education (ESCI) courses. For more information examine the website at: <http://www.gapsc.com/documentation/basicskillsinfo.asp>

The Basic Skills assessment is designed to assess knowledge and skills in the areas of reading, mathematics, and writing. The assessment is composed of three tests—the reading and mathematics tests each consist of selected-response questions; the writing test consists of selected-response questions and a constructed-response assignment.

Students may exempt the GACE basic skills assessment based on scores from the SAT, ACT, or GRE tests. Sum your verbal and mathematics scores – there is no minimum verbal or mathematics score. If the sum of those composite scores is above the following minimum scores then you are exempt from GACE basic skills:

- SAT exemptions: minimum combined verbal and mathematics score of 1000
- GRE exemption: minimum combined verbal and quantitative score of 1030
- ACT exemption: minimum combined English and mathematics score of 43.

Step 4 - Acceptance into the Program and Advisor Assignment

Once you have been admitted by the Graduate School, you will be assigned a science education faculty advisor (you will receive official notification of acceptance and your advisor assignment) to design and maintain a program of study (see <http://www.coe.uga.edu/mse/science/programs/index.html>) to include courses leading to certification and/or degrees in science education. You should meet with your advisor on a regular basis. You may make appointments by telephone (678-985-6781 for the Gwinnett Campus or 706-542-1763 for the main campus) or through email correspondence.

In consultation with your advisor and perhaps Dr. Baldwin, you will be advised as to which courses you should register. Most individuals will need to take courses in science subject matter courses as well as education courses. There is some flexibility as to the number of courses you must take in a given semester. Creating a plan soon after your acceptance is the best plan to enable you to finish the program in a timely way. More information regarding the specific course requirements is given below.

Important Note for Master's Degree Students

Under certain circumstances, course credit taken for certification can apply to the master's degree program of study. Students will be allowed to count 3 courses (or 9 semester hours) that are taken to fulfill certification requirements toward the requirements of the master's degree. These course must be taken for graduate credit (6000 level and above) and may NOT include ESCI 6450, 6460, 7460, 7470, and 7480. Courses that may count include: ESCI 6030, ESCI 6480, EDIT 6150, EPSY 6010, and EPSY 6800. (NO student will take more than three courses from this list – there may be other courses that when taken for graduate credit may count toward the requirements for the M.Ed. that are not included in this list.)

Step 5 - Registration for the GACE Content Assessment Tests

For many of the PACSS students, successful completion of the GACE subject matter content assessment will happen prior to matriculation into classes toward certification. See the Georgia Assessments for the Certification of Educators website for additional information - <http://www.gace.nesinc.com/> You must choose the appropriate GACE content assessment for your certification. The GACE assessment for each science certification area requires that you take both a content knowledge and content essays test.

**Professional Education Courses Required
for
Secondary (6-12) Science Certification**
(UGA Gwinnett-campus program)

In order to be recommended for certification in one of the secondary science areas, professional education coursework in the following areas must be completed:

One 3 semester hour course in Education Psychology – three examples of acceptable courses are shown below.

EPSY 2130 Exploring Learning and Teaching
or
EPSY 6010 Foundations for Human Development
or
EPSY 6800 Cognition in the Classroom

One 3 semester hour course in Special Education – two examples of acceptable courses are shown below.

ESCI 4030/6030 Teaching Science to Students with Special Educational Needs
or
SPED 2000 Survey of Special Education

One 3 semester hour course in Instructional Technology - three examples of acceptable courses are shown below.

ESCI 4480/6480 Technological Capabilities for Science Teaching
or
EDIT 2000 Introduction to Computers for Teachers
or
EDIT 6150 Introduction to Computer Based Education

Science Education Coursework (PACSS students must complete all of these courses as UGA students)

ESCI 6450 Science Curriculum and Learning

ESCI 6460 Methods of Science Teaching

ESCI 7460 Science Education School-Based Internship (must register for 6 credit hours in each of two semesters)

ESCI 7480 Philosophy and Leadership in Science Classroom Practice

NOTE: Prior to admission, a passing score (or exemption) on the GACE Basic Skills is required. A passing score on both the content knowledge and content essays for the appropriate GACE Content Assessment is normally required prior to being employed by as school district or being awarded a non-renewable certificate.

Science Content Coursework required for secondary science certification

In order to qualify for recommendation for certification in one of the four science certification fields, you must have at least 8 courses in that major field and they must include at least four of the sub-areas identified under the science certification field name. Science coursework is required in the following sub areas for each of the following majors:

BIOLOGY (four out of five areas required)

biochemistry/molecular biology
genetics/evolution
natural history/ecology
anatomy/physiology
cellular biology/developmental biology

EARTH SCIENCES (all areas required)

mineralogy/petrology
paleontology/stratigraphy
atmospheric/oceanic science
astronomy

CHEMISTRY (all areas required)

quantitative/qualitative analysis
physical chemistry
biochemistry
organic chemistry

PHYSICS (four out of five areas required)

mechanics
electricity and magnetism
thermodynamics
waves/optics
modern physics

A TYPICAL PROGRAM (ESCI 7480 may not be taken in the first summer of the program)

Summer	Fall	Spring	Summer
EPSY 6010	ESCI 6460 ESCI 6030 ESCI 7460	ESCI 6450 ESCI 7460	ESCI 6480 ESCI 7480

NOTE to current or prospective graduate students: Up to 3 courses can count for both initial certification and on a M.Ed. degree program of study. A student cannot use ESCI 6450, 6460, 7460, 7470, or 7480 in a master's degree program of study.

For additional information, please contact:

Dr. Paul Baldwin
Gwinnett Science Education Coordinator
214 Gwinnett Campus Building
2530 Sever Road
The University of Georgia – Gwinnett Campus
Lawrenceville, GA 30043
678-985-6781
pbaldwin@uga.edu

Dr. David Jackson
Science Education Graduate Coordinator
Department of Math and Science Education
212 Aderhold Hall
The University of Georgia
Athens, GA 30602
706-542-1763
djackson@uga.edu

BSED DEGREE PROGRAM
 Secondary School Science Teacher Certification
 Department of Mathematics and Science Education

BIOLOGY

Science Education Program – June 2008

Specialization:

Name: _____ I.D. No. _____ Date: _____

Athens Address: _____

Cell Phone: _____ Other Phone: _____

E-mail _____

NOTE: (1) A passing score (or exemption) on GACE Basic Skills is required before taking ESCI 3450, ESCI 4450, and ESCI 4460; **(2)** A passing score on GACE Content Assessments (both parts) is required in Physics before being recommended for clear-renewable certification; **and (3)** A grade of C or better is required in all science and professional education courses. The University policy states that a grade of C- will not satisfy this grade requirement.

Note: Superscripts below refer to explanations on back page

General Education Core

Courses	Hrs	Grade
I. Foundation Courses	9	
ENGL 1101	3	
ENGL 1102	3	
MATH 1113	3	
II. Science	7-8	
CHEM 1211 – 1211L	4	
BIOL 1107-1107L ¹	4	
III. Quantitative Reasoning	4	
MATH 2250-2250L	4	
IV. World languages and culture, Humanities and the arts²	12	
World Lang and Culture	3	
World Lang and Culture	3	
World Lang and Culture	3	
Humanities and Arts ³	3	
V. Social Science	9	
POLS 1101 ⁴	3	
HIST 2111 or 2212	3	
Social science elective	3	
VI. Major related courses	17	
EDUC/EFND 2110 ⁵	3	
EDUC 2120	3	
EDUC/EPSY 2130	3	
PHYS 1211-1211L ⁶	4	
PHYS 1212-1212L	4	
Elective to complete 60 hrs if needed	1-2	
Environmental literacy⁷		
TOTAL hrs. for CORE	60	

Courses Related to Program of Study

Courses	Hrs	Grade
Content Specialization	35	
CHEM 1212-1212L	4	
CHEM 2211-2211L	4	
BIOL 1108-1108L	4	
BCMB 3100	3	
BIOL(GENE) 3200	4	
BIOL(ECOL) 3500	4	
BIOL(GENE) 3000 or 4600	3-4	
BIOL elective A ⁸	3	
BIOL elective	3	
Science or science ed elective	3	
Technology	3	
ESCI 4480 or EDIT 2000	3	
Science Education⁹	26	
ESCI 3450	3	
ESCI 4450	3	
ESCI 4460	3	
ESCI 5460	11	
ESCI 5470	3	
ESCI 5480	3	
Other	4	
SPED 2000 or ESCI 4030	3	
PEDB	1	
Minimum Semester Hrs.	128	

EXPLANATIONS AND ALTERNATIVES – June 2008

- (1) Life science elective satisfied by completion of BIOL 1107-1107L.
- (2) List of courses to satisfy World Languages and Culture electives can be found at www.bulletin.uga.edu
- (3) Humanities and Arts electives: ARHI 2300; ARTS 2000, 2050; CLAS 1000, 1010, 1020; CMLT 2111, 2210, 2212, 2220, 2400, 2500, 2600; DANC 2010; DRAM 2000, 2120, 2130; ENGL 2310, 2320, 2330, 2340, 2400; FREN 2700; GRMN 2300; LAND 1500, 2510, 2520; MUSI 2020, 2040, 2060, 2080; PHIL 1000, 1500; RELI 1003; ROML 2550; RUSS 2050; SPAN 2550; SPCM 1010; SPCM 1100, 1500.
- (4) Students who have not met the Georgia and U.S. Constitution requirement by examination will enroll in Political science 1101. Students who have not met the Georgia and U.S. History requirement by examination will enroll in one 3 semester hour course from the following: HIST 2111 or 2112. If students meet these requirements, they will enroll in two more courses from the following list. If requirements in the above both have been met by examination, then one or two additional courses from the list may be selected. Students will meet these requirements by selection from at least two departments. AAEC 2580; AFAM 2000; ANTH 1102, 2000, CLAS 2000, 2110, 2113; ECON 2100, 2105, 2106, 2200; GEOG 1101, 1103, 1125; HIST 2051, 2052, 2111, 2111E, 2112, 2221, 2222, 2301, 2302, 2501, 2502, 2600, 2701, 2702; PHIL 2200, 2400; POLS 1101; PSYC 1101, 1101E; RELI 2004, 2005; SOCI 1101, 2020, 2600; WMST 1110, 2010
- (5) Courses listed here replace EFND 2030 and EPSY 2020 within what was formerly called Area F. All students completing BSED degrees after Spring 2009 must have this set of courses. For students who have previously completed SPED 2000, it will count in place of EDUC 2120 through Spring 2009.
- (6) Students who plan to take physics or chemistry at the 3000 level should select the sequence PHYS 1211/1211L and PHYS 1212/1212L (calculus based physics) in order to meet prerequisite requirements.
- (7) All students must fulfill the UGA Environmental Literacy Requirement. For current information on courses that will satisfy this requirement see: <http://bulletin.uga.edu/bulletin/prg/index.html>
- (8) Biology Elective A is to be an upper division organismal biology course, preferably with a laboratory (choose from the following or consult advisor for additional suggestions): BIOL/CBIO 3300, 3400; CBIO 3000, 4500, 4600; ECOL 3260, 3580, 4030, 4040, 4050, 4060, 4070, 4110; ENTO 3140, 3650, 4000; MARS 3450; MIBO 3510L; PBIOL 4200, 4600, 4650. **Note:** some courses require a prerequisite.
- (9) Admission to the Secondary (grades 7-12) Science Education Certification Program is a prerequisite for these courses. The requirements for admission include an overall grade point average of 2.50 and a passing score (or exemption) on GACE Basic Skills. Requirements for admission to the Science Education Certification Program include a) participation in at least two different teaching experiences in organized settings with school age children with a combined duration of at least 25 hours, b) a one page typed essay (not to exceed 250 words) that answers the following questions:
 - What was the nature, approximate dates, duration, and location of each teaching experience?
 - What did you learn from these experiences about the teaching profession?
 - How did these experiences affect your decision to choose the teaching profession?c) completion of at least 30 semester hours of the content specialization courses required of UGA science education majors or 30 semester hours of equivalent coursework. Application materials for Secondary Science Certification Program may be obtained in either Rooms 105 or 212 of Aderhold Hall.

BSED DEGREE PROGRAM
 Secondary School Science Teacher Certification
 Department of Mathematics and Science Education

CHEMISTRY

Science Education Program – June 2008

Specialization:

Name: _____ I.D. No. _____ Date: _____

Athens Address: _____

Cell Phone: _____ Other Phone: _____

E-mail _____

NOTE: (1) A passing score (or exemption) on GACE Basic Skills is required before taking ESCI 3450, ESCI 4450, and ESCI 4460; **(2)** A passing score on GACE Content Assessments (both parts) is required in Physics before being recommended for clear-renewable certification; **and (3)** A grade of C or better is required in all science and professional education courses. The University policy states that a grade of C- will not satisfy this grade requirement.

Note: Superscripts below refer to explanations on back page

General Education Core

Courses	Hrs	Grade
I. Foundation Courses	9	
ENGL 1101	3	
ENGL 1102	3	
MATH 1113	3	
II. Science	7-8	
CHEM 1211 – 1211L	4	
Life Science elective ¹	3-4	
III. Quantitative Reasoning	4	
MATH 2250-2250L	4	
IV. World languages and culture, Humanities and the arts²	12	
World Lang and Culture	3	
World Lang and Culture	3	
World Lang and Culture	3	
Humanities and Arts ³	3	
V. Social Science	9	
POLS 1101 ⁴	3	
HIST 2111 or 2212	3	
Social science elective	3	
VI. Major related courses	17	
EDUC/EFND 2110 ⁵	3	
EDUC 2120	3	
EDUC/EPSY 2130	3	
PHYS 1211-1211L ⁶	4	
PHYS 1212-1212L	4	
Elective to complete 60 hrs if needed	2	
Environmental literacy ⁷		
TOTAL hrs. for CORE	60	

Courses Related to Program of Study

Courses	Hrs	Grade
Content Specialization	35	
MATH 2260-2260L	4	
CHEM 1212-1212L	4	
CHEM 2211-2211L	4	
CHEM 2212-2212L	4	
CHEM 2300-2300L	4	
CHEM 3110	3	
CHEM 3300	3	
CHEM 3400	3	
CHEM 3511-3511L or BCMB 3100	3	
CHEM elective ⁸	3	
Technology	3	
ESCI 4480 or EDIT 2000	3	
Science Education⁹	26	
ESCI 3450	3	
ESCI 4450	3	
ESCI 4460	3	
ESCI 5460	11	
ESCI 5470	3	
ESCI 5480	3	
Other	4	
SPED 2000 or ESCI 4030	3	
PEDB	1	
Minimum Semester Hrs.	128	

EXPLANATIONS AND ALTERNATIVES – June 2008

- (1) Life science elective satisfied by completion of one of the following: BIOL 1103-1103L; BIOL 1104-1104L; BIOL 1107-1107L; BIOL 1108-1108L; ECOL 1000-1000L; LAND 1000; MARS 1020-1020L; PBIO1210-1210L; PBIO 1220-1220L
- (2) List of courses to satisfy World Languages and Culture electives can be found at www.bulletin.uga.edu
- (3) Humanities and Arts electives: ARHI 2300; ARTS 2000, 2050; CLAS 1000, 1010, 1020; CMLT 2111, 2210, 2212, 2220, 2400, 2500, 2600; DANC 2010; DRAM 2000, 2120, 2130; ENGL 2310, 2320, 2330, 2340, 2400; FREN 2700; GRMN 2300; LAND 1500, 2510, 2520; MUSI 2020, 2040, 2060, 2080; PHIL 1000, 1500; RELI 1003; ROML 2550; RUSS 2050; SPAN 2550; SPCM 1010; SPCM 1100, 1500.
- (4) Students who have not met the Georgia and U.S. Constitution requirement by examination will enroll in Political science 1101. Students who have not met the Georgia and U.S. History requirement by examination will enroll in one 3 semester hour course from the following: HIST 2111 or 2112. If students meet these requirements, they will enroll in two more courses from the following list. If requirements in the above both have been met by examination, then one or two additional courses from the list may be selected. Students will meet these requirements by selection from at least two departments. AAEC 2580; AFAM 2000; ANTH 1102, 2000, CLAS 2000, 2110, 2113; ECON 2100, 2105, 2106, 2200; GEOG 1101, 1103, 1125; HIST 2051, 2052, 2111, 2111E, 2112, 2221, 2222, 2301, 2302, 2501, 2502, 2600, 2701, 2702; PHIL 2200, 2400; POLS 1101; PSYC 1101, 1101E; RELI 2004, 2005; SOCI 1101, 2020, 2600; WMST 1110, 2010
- (5) Courses listed here replace EFND 2030 and EPSY 2020 within what was formerly called Area F. All students completing BSED degrees after Spring 2009 must have this set of courses. For students who have previously completed SPED 2000, it will count in place of EDUC 2120 through Spring 2009.
- (6) Students who plan to take physics or chemistry at the 3000 level should select the sequence PHYS 1211/1211L and PHYS 1212/1212L (calculus based physics) in order to meet prerequisite requirements.
- (7) All students must fulfill the UGA Environmental Literacy Requirement. For current information on courses which will satisfy this requirement see: <http://bulletin.uga.edu/bulletin/prg/index.html>
- (8) CHEM elective must be a 3000/4000 level chemistry course.
- (9) Admission to the Secondary (grades 7-12) Science Education Certification Program is a prerequisite for these courses. The requirements for admission include an overall grade point average of 2.50 and a passing score (or exemption) on GACE Basic Skills. Requirements for admission to the Science Education Certification Program include a) participation in at least two different teaching experiences in organized settings with school age children with a combined duration of at least 25 hours, b) a one page typed essay (not to exceed 250 words) that answers the following questions:
 - What was the nature, approximate dates, duration, and location of each teaching experience?
 - What did you learn from these experiences about the teaching profession?
 - How did these experiences affect your decision to choose the teaching profession?c) completion of at least 30 semester hours of the content specialization courses required of UGA science education majors or 30 semester hours of equivalent coursework. Application materials for Secondary Science Certification Program may be obtained in either Rooms 105 or 212 of Aderhold Hall.

BSED DEGREE PROGRAM
 Secondary School Science Teacher Certification
 Department of Mathematics and Science Education

PHYSICS

Science Education Program – June 2008

Specialization:

Name: _____ I.D. No. _____ Date: _____

Athens Address: _____

Cell Phone: _____ Other Phone: _____

E-mail _____

NOTE: (1) A passing score (or exemption) on GACE Basic Skills is required before taking ESCI 3450, ESCI 4450, and ESCI 4460; **(2)** A passing score on GACE Content Assessments (both parts) is required in Physics before being recommended for clear-renewable certification; **and (3)** A grade of C or better is required in all science and professional education courses. The University policy states that a grade of C- will not satisfy this grade requirement.

Note: Superscripts below refer to explanations on back page

General Education Core

Courses	Hrs	Grade
I. Foundation Courses	9	
ENGL 1101	3	
ENGL 1102	3	
MATH 1113	3	
II. Science	7-8	
CHEM 1211 – 1211L	4	
Life Science elective ¹	3-4	
III. Quantitative Reasoning	4	
MATH 2250-2250L	4	
IV. World languages and culture, Humanities and the arts²	12	
World Lang and Culture	3	
World Lang and Culture	3	
World Lang and Culture	3	
Humanities and Arts ³	3	
V. Social Science	9	
POLS 1101 ⁴	3	
HIST 2111 or 2212	3	
Social science elective	3	
VI. Major related courses	17	
EDUC/EFND 2110 ⁵	3	
EDUC 2120	3	
EDUC/EPsy 2130	3	
PHYS 1211-1211L ⁶	4	
PHYS 1212-1212L	4	
Elective to complete 60 hrs if needed	2	
Environmental literacy ⁷		
TOTAL hrs. for CORE	60	

Courses Related to Program of Study

Courses	Hrs	Grade
Content Specialization	35	
MATH 2260-2260L	4	
MATH 2500	3	
MATH 2700	3	
PHYS 3320-3320L	3	
PHYS 3330-3330L	3	
PHYS 3700	3	
PHYS 4101	3	
PHYS 4201	3	
PHYS 4300	3	
CHEM 1212-1212L	4	
Science or Science Education Electives	3	
Technology	3	
ESCI 4480 or EDIT 2000	3	
Science Education⁸	26	
ESCI 3450	3	
ESCI 4450	3	
ESCI 4460	3	
ESCI 5460	11	
ESCI 5470	3	
ESCI 5480	3	
Other	4	
SPED 2000 or ESCI 4030	3	
PEDB	1	
Minimum Semester Hrs.	128	

EXPLANATIONS AND ALTERNATIVES – June 2008

- (1) Life science elective satisfied by completion of one of the following: BIOL 1103-1103L; BIOL 1104-1104L; BIOL 1107-1107L; BIOL 1108-1108L; ECOL 1000-1000L; LAND 1000; MARS 1020-1020L; PBIO1210-1210L; PBIO 1220-1220L
- (2) List of courses to satisfy World Languages and Culture electives can be found at www.bulletin.uga.edu
- (3) Humanities and Arts electives: ARHI 2300; ARTS 2000, 2050; CLAS 1000, 1010, 1020; CMLT 2111, 2210, 2212, 2220, 2400, 2500, 2600; DANC 2010; DRAM 2000, 2120, 2130; ENGL 2310, 2320, 2330, 2340, 2400; FREN 2700; GRMN 2300; LAND 1500, 2510, 2520; MUSI 2020, 2040, 2060, 2080; PHIL 1000, 1500; RELI 1003; ROML 2550; RUSS 2050; SPAN 2550; SPCM 1010; SPCM 1100, 1500.
- (4) Students who have not met the Georgia and U.S. Constitution requirement by examination will enroll in Political science 1101. Students who have not met the Georgia and U.S. History requirement by examination will enroll in one 3 semester hour course from the following: HIST 2111 or 2112. If students meet these requirements, they will enroll in two more courses from the following list. If requirements in the above both have been met by examination, then one or two additional courses from the list may be selected. Students will meet these requirements by selection from at least two departments. AAEC 2580; AFAM 2000; ANTH 1102, 2000, CLAS 2000, 2110, 2113; ECON 2100, 2105, 2106, 2200; GEOG 1101, 1103, 1125; HIST 2051, 2052, 2111, 2111E, 2112, 2221, 2222, 2301, 2302, 2501, 2502, 2600, 2701, 2702; PHIL 2200, 2400; POLS 1101; PSYC 1101, 1101E; RELI 2004, 2005; SOCI 1101, 2020, 2600; WMST 1110, 2010
- (5) Courses listed here replace EFND 2030 and EPSY 2020 within what was formerly called Area F. All students completing BSED degrees after Spring 2009 must have this set of courses. For students who have previously completed SPED 2000, it will count in place of EDUC 2120 through Spring 2009.
- (6) Students who plan to take physics or chemistry at the 3000 level should select the sequence PHYS 1211/1211L and PHYS 1212/1212L (calculus based physics) in order to meet prerequisite requirements.
- (7) All students must fulfill the UGA Environmental Literacy Requirement. For current information on courses which will satisfy this requirement see: <http://bulletin.uga.edu/bulletin/prg/index.html>
- (8) Admission to the Secondary (grades 7-12) Science Education Certification Program is a prerequisite for these courses. The requirements for admission include an overall grade point average of 2.50 and a passing score (or exemption) on GACE Basic Skills. Requirements for admission to the Science Education Certification Program include a) participation in at least two different teaching experiences in organized settings with school age children with a combined duration of at least 25 hours, b) a one page typed essay (not to exceed 250 words) that answers the following questions:
 - What was the nature, approximate dates, duration, and location of each teaching experience?
 - What did you learn from these experiences about the teaching profession?
 - How did these experiences affect your decision to choose the teaching profession?c) completion of at least 30 semester hours of the content specialization courses required of UGA science education majors or 30 semester hours of equivalent coursework. Application materials for Secondary Science Certification Program may be obtained in either Rooms 105 or 212 of Aderhold Hall.

BSED DEGREE PROGRAM
 Secondary School Science Teacher Certification
 Department of Mathematics and Science Education

EARTH

Science Education Program – June 2008

Specialization:

Name: _____ I.D. No. _____ Date: _____

Athens Address: _____

Cell Phone: _____ Other Phone: _____

E-mail: _____

NOTE: (1) A passing score (or exemption) on GACE Basic Skills is required before taking ESCI 3450, ESCI 4450, and ESCI 4460; **(2)** A passing score on GACE Content Assessments (both parts) is required in Physics before being recommended for clear-renewable certification; **and (3)** A grade of C or better is required in all science and professional education courses. The University policy states that a grade of C- will not satisfy this grade requirement.

Note: Superscripts below refer to explanations on back page

General Education Core

Courses	Hrs	Grade
I. Foundation Courses	9	
ENGL 1101	3	
ENGL 1102	3	
MATH 1113	3	
II. Science	7-8	
CHEM 1211 – 1211L	4	
Life Science elective ¹	3-4	
III. Quantitative Reasoning	4	
MATH 2250-2250L	4	
IV. World languages and culture, Humanities and the arts²	12	
World Lang and Culture	3	
World Lang and Culture	3	
World Lang and Culture	3	
Humanities and Arts ³	3	
V. Social Science	9	
POLS 1101 ⁴	3	
HIST 2111 or 2212	3	
Social science elective	3	
VI. Major related courses	17	
EDUC/EFND 2110 ⁵	3	
EDUC 2120	3	
EDUC/EPsy 2130	3	
PHYS 1211-1211L ⁶	4	
PHYS 1212-1212L	4	
Elective to complete 60 hrs if needed	2	
Environmental literacy⁷		
TOTAL hrs. for CORE	60	

Courses Related to Program of Study

Courses	Hrs	Grade
Content Specialization	35	
CHEM 1212-1212L	4	
GEOL 1250-1250L or GEOL 1121-1121L	4	
GEOL 1260-1260L or GEOL 1122 -1122L	4	
GEOG 1112-1112L	4	
ASTR 1010-1010L	4	
GEOL 3030 OR GEOL 4090 or MARS 4100	3	
Earth Science Electives: ⁸ Primarily for majors: GEOL 3010, 3020, 4010, 4020 Primarily for non-majors: GEOL 2120, 3090, 3120, 3130, 3150, 3200, 3250, 3300, 3350; GEOG 3010, 3110; ASTR 1020, 1420, 1540, 1660, 1870	12	
Technology	3	
ESCI 4480 or EDIT 2000	3	
Science Education⁹	26	
ESCI 3450	3	
ESCI 4450	3	
ESCI 4460	3	
ESCI 5460	11	
ESCI 5470	3	
ESCI 5480	3	
Other	4	
SPED 2000 or ESCI 4030	3	
PEDB	1	
Minimum Semester Hrs.	128	

EXPLANATIONS AND ALTERNATIVES – June 2008

- (1) Life science elective satisfied by completion of one of the following: BIOL 1103-1103L; BIOL 1104-1104L; BIOL 1107-1107L; BIOL 1108-1108L; ECOL 1000-1000L; LAND 1000; MARS 1020-1020L; PBIO1210-1210L; PBIO 1220-1220L
- (2) List of courses to satisfy World Languages and Culture electives can be found at www.bulletin.uga.edu
- (3) Humanities and Arts electives: ARHI 2300; ARTS 2000, 2050; CLAS 1000, 1010, 1020; CMLT 2111, 2210, 2212, 2220, 2400, 2500, 2600; DANC 2010; DRAM 2000, 2120, 2130; ENGL 2310, 2320, 2330, 2340, 2400; FREN 2700; GRMN 2300; LAND 1500, 2510, 2520; MUSI 2020, 2040, 2060, 2080; PHIL 1000, 1500; RELI 1003; ROML 2550; RUSS 2050; SPAN 2550; SPCM 1010; SPCM 1100, 1500.
- (4) Students who have not met the Georgia and U.S. Constitution requirement by examination will enroll in Political science 1101. Students who have not met the Georgia and U.S. History requirement by examination will enroll in one 3 semester hour course from the following: HIST 2111 or 2112. If students meet these requirements, they will enroll in two more courses from the following list. If requirements in the above both have been met by examination, then one or two additional courses from the list may be selected. Students will meet these requirements by selection from at least two departments. AAEC 2580; AFAM 2000; ANTH 1102, 2000, CLAS 2000, 2110, 2113; ECON 2100, 2105, 2106, 2200; GEOG 1101, 1103, 1125; HIST 2051, 2052, 2111, 2111E, 2112, 2221, 2222, 2301, 2302, 2501, 2502, 2600, 2701, 2702; PHIL 2200, 2400; POLS 1101; PSYC 1101, 1101E; RELI 2004, 2005; SOCI 1101, 2020, 2600; WMST 1110, 2010
- (5) Courses listed here replace EFND 2030 and EPSY 2020 within what was formerly called Area F. All students completing BSED degrees after Spring 2009 must have this set of courses. For students who have previously completed SPED 2000, it will count in place of EDUC 2120 through Spring 2009.
- (6) Students who plan to take physics or chemistry at the 3000 level should select the sequence PHYS 1211/1211L and PHYS 1212/1212L (calculus based physics) in order to meet prerequisite requirements.
- (7) All students must fulfill the UGA Environmental Literacy Requirement. For current information on courses which will satisfy this requirement see: <http://bulletin.uga.edu/bulletin/prg/index.html>
- (8) Please see the separate document Notes on Earth Science Content Specialization Courses for details.
- (9) Admission to the Secondary (grades 7-12) Science Education Certification Program is a prerequisite for these courses. The requirements for admission include an overall grade point average of 2.50 and a passing score (or exemption) on GACE Basic Skills. Requirements for admission to the Science Education Certification Program include a) participation in at least two different teaching experiences in organized settings with school age children with a combined duration of at least 25 hours, b) a one page typed essay (not to exceed 250 words) that answers the following questions:
 - What was the nature, approximate dates, duration, and location of each teaching experience?
 - What did you learn from these experiences about the teaching profession?
 - How did these experiences affect your decision to choose the teaching profession?c) completion of at least 30 semester hours of the content specialization courses required of UGA science education majors or 30 semester hours of equivalent coursework. Application materials for Secondary Science Certification Program may be obtained in either Rooms 105 or 212 of Aderhold Hall.