

LIBERAL ARTS AND SCIENCES: SCIENCE

HEGIS: 5649
SUNY CODE: 0220

The mission of the science program is to provide the knowledge, skills and values needed to prepare the science major to transfer to upper division programs, and to produce a scientifically literate citizen. Graduates of the science programs are prepared to:

- Demonstrate analytical abilities in organizing, data gathering, synthesizing and evaluating
- Demonstrate an ability to use the scientific process to solve problems
- Demonstrate an understanding of value systems
- Write a scientific research paper
- Discuss and evaluate current science issues such as health, medical, environmental and biotechnology problems

Career Opportunities/Transfer Information

The science program is designed to prepare students for transfer to upper division programs in a wide variety of science disciplines including biology, biotechnology, chemistry, chiropractic, environmental studies, forestry, forest technology, geology, landscape architecture, medical technology, nursing, pharmacology, physical therapy, physics, plant science, radiologic technology and science education. Graduates of HCCC have transferred to the following institutions: SUNY College of Environmental Science and Forestry at Syracuse, Cornell University, SUNY at Buffalo, SUC at Oswego, SUNY Upstate Medical University, SUNY at Albany, Rochester Institute of Technology, Ithaca College, Utica College, SUC at Oneonta, SUC at Plattsburgh, SUC at Fredonia, SUNY at Stony Brook, SUC at Cortland, University of Virginia, University of Massachusetts, Old Dominion, University of Pennsylvania, University of California at Irving, Northeastern Palmer College of Chiropractic and University of Fairbanks. Graduates of HCCC and upper division programs have found employment as:

arborist	forester	pharmacist
biology teacher	forestry consultant	pharmacologist
chiropractor	genetic engineer	physical therapist
conservation law officer	GIS technician	plant pathologist
environmental education teacher	ichthyologist	public health sanitation worker
environmental engineer	landscape architect	science lab technician
environmental health consultant	loggers insurance business	science teacher
environmental law specialist	marine field researcher	smoke jumper
environmental manager	medical doctor	soil conservationist
fish culturist	optometrist	veterinary technician
fisheries manager	ornithologist	wildlife biologist
fish hatchery worker	park ranger	zoologist

1st Semester		Credits	2nd Semester		Credits
EN 111	English I	3	EN 112	English II	3
FS 100	First Year Student Seminar	1		Laboratory Science Electives++	8
	Laboratory Science Electives++	8		Mathematics Elective*	3-4
	Mathematics Elective*	3-4		Western Civilization Selective***	3
	Social Science Elective**	3			
	Total 18-19			Total 17-18	

3rd Semester		Credits	4th Semester		Credits
	Laboratory Science Elective++	4		Laboratory Science Elective++	4
	Arts Selective+	3		Humanities Elective	3
	Mathematics OR Science Elective++	3-4		Mathematics OR Science Elective++	3-4
	Elective****	3		Elective++	3-4
	Physical Education Activity	1		Physical Education Activity	1
	Total 14-15			Total 14-16	

*63-68 Credits Required
for the
Associate in Science Degree*

A student pursuing a degree in this registered program may, after consultation with an academic advisor, select course(s) to prepare for a specialization in career or transfer plans.

*MA 127 or higher.

**Student may select any course from the Social Science category.

***Student must select one (1) of the following: SS 111, SS 112 or SS 145

****HU 151 or HU 158 recommended.

+Student may select any course from The Arts category except: HU 110, HU 126 or HU 210.

++If science elective is chosen, SC 114, SC 116, SC 118 may not be taken without advisor approval. If mathematics elective is chosen, student must take MA 127 or higher. If a laboratory science elective is chosen, SC 125 or SC 126 and SC 141 or SC 142 may not be taken.

For further information, contact the Business, Health, Science and Technology Division at (315) 866-0300 or toll free 1-888-GO-4-HCCC, ext. 8230/8240.

This program complies with the State University General Education requirement.

SCIENCE TRANSFER OPPORTUNITIES

Taking these courses does not insure that all first two-year requirements have been met; nor will it guarantee acceptance in all programs at all institutions. For additional information, please contact the HCCC Transfer Office.

Biology:

This sequence is designed for transfer study in the biological sciences. Completion of a B.S. degree can lead to a career in industry, research, government or teaching in the fields of agriculture, biochemistry, ecology, environmental sciences, forestry, marine science, medicine and others. Biology serves as the major discipline for many specialized areas.

Students enrolled in this program transfer to Cornell University, SUNY College of Environmental Science and Forestry at Syracuse, other SUNY four-year units and private colleges such as Utica College.

Students who desire to transfer to a four-year college to prepare for a career in Biology are advised to take the following courses:

MA 245	Calculus I
SC 155	Biological Science I
SC 143	Animal Biology, SC 145 Plant Biology I – Botany, or SC 156 Biological Science II
SC 153-154	General Chemistry I & II
SC 211	Microbiology I or SC 261 Ecology
SC 225-226	Organic Chemistry I & II
SC 255	Genetics

Chemistry:

The Chemistry emphasis is suggested for students interested in transferring to four-year institutions in the field of chemistry or closely allied fields. The baccalaureate degree in chemistry can lead to careers in such areas as chemical research, chemical engineering or chemical education.

Students who desire to transfer to a four-year college to prepare for a career in Chemistry are advised to take the following sequence:

MA 245	Calculus I
SC 153-154	General Chemistry I & II
SC 225-226	Organic Chemistry I & II

Other Laboratory Science electives as required.

Chiropractic:

Successful completion of designated coursework at HCCC will meet degree requirements for the A.S. degree and will satisfy some prerequisite coursework for the Doctor of Chiropractic degree. All applicants for Doctor of Chiropractic programs must complete a minimum of 90 semester hours and in some colleges a baccalaureate degree is needed to enter the Doctor of Chiropractic degree program.

MA 132	College Algebra and Trigonometry
SC 153-154	General Chemistry I & II
SC 155	Biological Science I
SC 156	Biological Science II
SC 225-226	Organic Chemistry I & II

Additional electives in Biology and Social Sciences will be determined after consultation with the student's advisor.

Environmental Science and Forestry:

This sequence is designed for transfer study in a variety of forestry occupations including:

- Biochemistry, environmental chemistry and natural and synthetic polymer chemistry
- Ecology, entomology, environmental biology, fish and wildlife biology, forest pathology, plant sciences or zoology
- Pre-medicine
- Forest management, land planning or landscape architecture

Students enrolled in this sequence transfer to the SUNY College of Environmental Science and Forestry at Syracuse, SUC at Plattsburgh, SUC at Cortland or other SUNY four-year institutions. Students should see their advisor to customize their courses to match their intended field. Students will typically take the following courses:

MA 141	Pre-Calculus Mathematics and/or
MA 245	Calculus I
SC 155	Biological Science I
SC 143	Animal Biology, SC 145 Plant Biology I – Botany, or SC 156 Biological Science II
SC 258	Environmental Science

Additional electives in Biology, Chemistry, and/or Physics will be determined after consultation with the student's advisor.

Exercise Science:

This emphasis is designed for transfer into an athletic training program at a four-year institution. Admission to a four-year school is not guaranteed. A minimum GPA of 3.6 to 3.8 and the following electives are recommended:

SC	153 & 154	General Chemistry I & II
SC	133 & 134	College Physics I & II
MA	245	Calculus I
MA	128	Mathematical Statistics II
SC	253 & 254	Anatomy & Physiology I & II
SC	217	Exercise Science
PE	101 & 102	Clinical Experience in Athletic Training I & II
PE	201 & 202	Field Experience in Athletic Training I & II

Forest Technology:

Students who desire to transfer to the Ranger School in Wanakena, NY to prepare for a career in Forest Technology are advised to take the following courses. Taking these courses does not guarantee acceptance to the Ranger School.

EN	171	Introduction to Technical Writing
MA	130	Intermediate Algebra
MA	132	College Algebra and Trigonometry
MA	141	Pre-Calculus Mathematics
SC	145	Plant Biology I - Botany
SC	155	Biological Science I
SC	156	Biological Science II
SC	161	Physical Geology
SC	261	Ecology
SS	186	Introduction to Microeconomics

Pharmacy:

This emphasis is designed for transfer into a professional program at a four-year institution. Transfer is not guaranteed. Students must work closely with their advisors.

MA	245	Calculus I
SC	153-154	General Chemistry I & II
SC	155	Biological Science I
SC	156	Biological Science II, SC 143 Animal Biology, or SC 145 Plant Biology I - Botany
SC	211	Microbiology I
SC	225-226	Organic Chemistry I & II
SS	151	Introductory Psychology

Physical Therapy:

This emphasis is designed to assist students seeking entry into SUNY Upstate Medical University. Transfer to other institutions is possible. The program is highly competitive and transfer admission is limited (GPA 3.5 or above). Students must work closely with their academic advisors. Admission to SUNY Upstate Medical University is not guaranteed.

Students who desire to transfer to a four-year college to prepare for a career in Physical Therapy are advised to take the following courses:

HE	128	First Aid and Basic CPR or Current Certification
MA	141	Pre-Calculus Mathematics or MA 245 Calculus I
SC	133-134	College Physics I & II
SC	153-154	General Chemistry I & II
SC	155	Biological Science I
SC	156	Biological Science II or SC 143 Animal Biology
SS	151	Introductory Psychology
SS	152	Developmental Psychology

Volunteer or work experience in a physical therapy department is required.

continued on next page

continued from previous page

Physics:

Students who desire to transfer to a four-year college to prepare for a career in Physics are advised to take the following electives:

MA 245-246-247	Calculus I, II and III, or Chemistry Electives
SC 133-134	College Physics I & II

Radiologic Technology:

This is designed to provide students who have completed or who plan to enter approved programs in Radiologic Technology an opportunity to earn the Associate in Science Degree. A year of transfer credit will be given to students who have successfully completed their professional training.

MA 127	Mathematical Statistics I
MA 132	College Algebra and Trigonometry
SC 141	Fundamentals of Biology I
SC 253-254	Anatomy & Physiology I & II
SS Elective	American History, Western Civilization, or Other World Civilizations categories
HU Elective	Humanities or The Arts category

Science Education:

Students who desire to transfer to a four-year college to prepare for a career in teaching Biology, Chemistry, Earth Science, General Science or Physics are advised to take the following electives:

*MA 141	Pre-Calculus Mathematics and/or *MA 245 Calculus I
SC 133	College Physics I
SC 143/SC 145	Animal Biology or Plant Biology I - Botany
SC 153-154	General Chemistry I & II and/or SC 155-156 Biological Science I & II

*MA requirements may vary from institution to institution.

Additional electives in Biology, Chemistry, and/or Physics will be determined after consultation with the student's advisor.

Students interested in transferring to a four-year college to prepare for a career in the following areas should see their advisor:

Conservation	Engineering Technology	General Science
Medical Laboratory Technology	Medical Technology	