

**ASSOCIATE IN SCIENCE DEGREE
TRACK 1 AND TRACK 2**

Summary of Requirements

Complete the departmental requirements of the institution to which the student intends to transfer. **All courses taken at Grays Harbor College should be transfer courses.**

- Complete an approved ninety credit program containing pre-professional and general education coursework
- Complete three PE requirement credits
- Maintain an overall GPA of at least 2.0
- Fulfill all obligations to the college, financial or otherwise

and

- Fulfill general requirements for all degrees as described on page 46.

Completion of all required courses in these programs satisfies Intercollege Relations Commission (ICRC) Associate in Science transfer degree requirements. A student transferring with a transfer Associate in Science degree enters all Washington public and some private four-year institution with junior-level standing. Completing these degrees does not guarantee students admission to the major.

Students interested in pursuing a 4-year degree are strongly encouraged to complete the requirements for Associate in Science Transfer Degree #1 (AS-T #1) - Biological science, environmental/resource sciences, chemistry, geology, and earth science or Associate in Science Transfer Degree #2 (AS-#2) - Engineering, computer science, physics, and atmospheric sciences. Students who do not complete all Track #1 or Track #2 course requirements may still be eligible to receive an Associate of Science (AS) degree from Grays Harbor College. Consult your advisor for more information.

Associate in Science Transfer

Track 1

Associate in Science Transfer Track 1 is designed to prepare students for upper division study in the areas of biological sciences, environmental/resources sciences, chemistry, geology, and earth science.

Biology, Botany, Zoology, Marine Biology

Biologists are employed in a wide variety of fields. These include research, teaching, industry, governmental agencies, and consulting firms in environmental work. Some positions are open to holders of the bachelor degree, but most of the opportunities exist at the master and doctoral levels of preparation. Most biologists need a broad background in the natural sciences, mathematics, and communication skills.

Students should choose from among these recommended courses, depending on the main field of interest. The academic advisor will assist the student to prepare for upper-division work at a four-year college or university.

Credits

BIOL 114, 201, 202, 203	15
CHEM& 161, 162, 163	17
CHEM& 261, 262, 263 or	15
PHYS& 121, 122, 123	
ENGL& 101	5
MATH& 142, 151, 152	15
MATH& 153 or 260	5
Humanities and Social Science	15
(at least 5 credits in each area)	
Electives	3
PE requirement credits	3

Chemistry

Chemistry is the study of matter and the manner in which it changes and reacts as well as the laws governing those reactions. Chemists develop models and theories and perform research in chemical, medical and several related sciences. Qualified graduates find employment in teaching or in virtually every industry.

Credits

CHEM& 161, 162, 163	17
CHEM& 261, 262, 263	15
ENGL& 101	5
PHYS& 221, 222, 223	15
MATH& 142, 151, 152, 153	20
Humanities and Social Science	15
(at least 5 credits in each area)	
Electives	3
PE requirement credits	3

*Associate in
Science Transfer
Degree Track 1*

*Biology, Botany,
Zoology,
Marine Biology*

Chemistry

Fisheries
 Geology
 Natural Resources

**Associate in Science Transfer
 Track 1 (continued)**

Fisheries

Fisheries is the science of harvesting, culture, and management of finfish and shellfish. Fisheries scientists serve as culturists, researchers, and managers for state and federal natural resource agencies, tribes and private industry in the Pacific Northwest. A degree in fisheries science usually requires four years of college training. The first two years are spent completing lower-division courses required of all majors. During the last two years, a student majors in core areas such as aquaculture, seafood technology, habitat protection, management or enforcement.

The following list of courses is typical of the first two years of a fisheries program. Due to a wide choice and variation in bachelor degree programs, consultation with an academic advisor or counselor is necessary.

	<u>Credits</u>
BIOL 114, 201, 202, 203	15
CHEM& 161, 162, 163	17
ECON& 201, 202	10
ENGL& 101, 235	10
MATH& 141, 142, 151, 152, 153	25
PHYS& 121, 122, 123, or 221, 222, 223	15
Electives: (include at least five hours each in Humanities and Social Science)	10
PE requirement credits	3

Geology

Geology is the study of the earth, its materials, and the processes that shape those materials into the familiar forms of mountains, oceans, plains and valleys. An understanding of geology is fundamental to the development of mineral and energy resources in a resource poor world; to the appropriate handling of environmental concerns, like hazardous waste disposal and water pollution in an increasingly polluted world; and to the understanding of the nature of violent events like floods, volcanic eruptions, and earthquakes. Consequently, geologists are employed by a variety of state and federal agencies, oil and mineral exploration firms, construction and engineering firms, and, of course, colleges and universities.

Geology (Continued)

	<u>Credits</u>
CHEM& 161, 162, 163	17
ENGL& 101	5
GEOL& 101	5
MATH& 142, 151, 152, 153	20
PHYS& 121, 122, 123, or 221, 222, 223	15
Humanities and Social Science	15
(at least 5 credits in each area)	
Electives	13
PE requirement credits	3

Natural Resources

Natural resource science includes a systematized, yet holistic study of both the natural and physical worlds. Well developed communication, leadership, and teamwork skills will be of equal value to sound scientific knowledge and skills, since much of the work natural resource scientists do (watershed analysis, water quality monitoring, and development of habitat management plans) is done collaboratively with individuals from non-natural resource backgrounds (i.e. engineers, sociologists, economists, and legislators). A bachelor degree in natural resources requires four to five years of training. The first two to three years are usually spent meeting science, mathematics, and general education requirements. The last two years are spent majoring in core specific, natural resources areas (i.e. environmental studies, fish and wildlife management, conservation ecology and range management).

The following list of courses is typical of the first two years of a natural resources program. Due to a wide choice and variation in bachelor degree programs, consultation with an academic advisor or counselor is necessary.

	<u>Credits</u>
BIOL 114, 201, 202, 203	20
CHEM& 161, 162, 163	17
ECON& 201, 202	10
ENGL& 101, 235	10
MATH& 141, 142, 151, 152, 153	25
PHYS& 121, 122, 123, or 221, 222, 223	15
Electives:	10
(include at least five hours each in Humanities and Social Science)	
PE requirement credits	3

Associate in Science Transfer

Track 2

Associate in Science Transfer Track 2 is designed to prepare students for upper division study in the areas of Engineering, Computer Science, Physics, and Atmospheric Sciences.

Physics

Physics inquires into the nature of the physical world and the laws governing our universe and is thus basic to the physical sciences, engineering, technology and life sciences. The career opportunities are broad, including scientific research, teaching, business, law, health and related fields.

	<u>Credits</u>
CHEM& 161, 162, 163	17
COMSC 209	5
ENGL& 101 and 102 or 235	10
MATH& 142, 151, 152, 153; MATH 241	25
PHYS& 221, 222, 223	15
Humanities and Social Science	15
(at least 5 credits in each area)	
Electives	3
PE requirement credits	3

Pre-Engineering

Engineers apply theories and principles of science and mathematics to practical technical problems. They design machinery, products, systems and processes for efficient and economical performance. Engineers work for manufacturing industries, public utilities, engineering and architectural services, construction firms, and business and management consulting services. A degree in engineering generally requires four years of college training. The first two years are usually spent meeting science, mathematics and general education requirements. The last two years are spent majoring in a specific area such as civil, mechanical, electrical, or aeronautical engineering.

The following courses are recommended to meet the lower-division requirements for a major in pre-engineering:

	<u>Credits</u>
CHEM& 161, 162	11
COMSC 209	5
ENGL& 101 and 102 or 235	10
MATH& 142, 151, 152, 153; MATH 241	25
PHYS& 221, 222, 223	15
Humanities and Social Science	15
(at least 5 credits in each area)	
Electives	9
PE requirement credits	3

*Associate in
Science Transfer
Track 2*

Physics

Pre-Engineering

