

# Liberal Arts & Sciences

## Program Description

Liberal Arts & Sciences is a flexible program designed for those who plan to transfer to a four-year institution, who are looking for personal enrichment, or who are uncertain about their major area of study. With the careful guidance of an academic advisor, students can tailor their studies to best address their objectives.

The Liberal Arts & Sciences program offers maximum flexibility for students who plan to transfer to a four-year institution. The 30-credit general education core offers courses that transfer smoothly and seamlessly to Pennsylvania State System of Higher Education universities and other local colleges and universities.

A large number of open electives enables students to tailor their program to their individual needs and interests.

The degree also offers students the opportunity to explore the entire curriculum and discover a variety of possibilities for future careers.

Students can develop their creativity in literature and the arts, explore the potential of technology, expand awareness of global cultures and the human condition, enhance mathematical and scientific reasoning, and refine oral and written communication skills.

## Program Objectives

Upon completion of the program, the student will be able to:

- Effectively design a plan for successful transfer into the chosen four-year major and make an informed decision in order to choose a proper career path.
- Demonstrate the ability to effectively communicate and interact (both in writing and orally) with a diverse population.
- Apply skills to solve basic technical and mathematical problems.
- Demonstrate a critical appreciation for the creative process in art, music, literature, and/or language.

## Obtaining the Degree

To earn the Associate of Liberal Arts & Sciences Degree, the student must:

- Matriculate into the program.
- Satisfactorily complete all degree requirements, including General Education and Major Requirements of the degree.

## Liberal Arts & Sciences (A.A.): Concentration Pathways (Optional)

Students may choose to pursue a concentration pathway within the Liberal Arts and Sciences Degree. Pathway courses are taken as part of the open elective course requirements of the degree. Successful completion of a

pathway will be indicated on the student transcript as a Concentration in the selected path. *Please note that Pathway Electives cannot be used to satisfy General Education Requirements. The following Concentration Pathways are available:*

- *Liberal Arts & Sciences A.A.: Biology (for Biology: Pre-Professional, or for Biology: Science)*
- *Liberal Arts & Sciences A.A.: Chemistry (for Chemistry: Science)*
- *Liberal Arts & Sciences A.A.: Communication*
- *Liberal Arts & Sciences A.A.: English*
- *Liberal Arts & Sciences A.A.: History*

## Liberal Arts & Sciences (A.A.): Biology Concentration Pathways

Successful completion of one of the Biology Concentration Pathways will be indicated on the student transcript as a Concentration in Biology. Click on the indicated Pathways below to view the Recommended Sequence of Courses.

- **Biology: Pre-Professional** (The courses included in this concentration pathway enables a student to pursue a bachelor's degree in pre-professional studies such as physician's assistant, pre-physical therapy, pre-dental, pre-occupational therapy, etc.)
- **Biology: Science** (The courses included in this concentration pathway allow for a successful transition to a bachelor's degree in biology, general science, environmental science, or other biology-related fields.)

## Liberal Arts & Sciences (A.A.): Chemistry Concentration Pathways

Successful completion of one of the Chemistry Concentration Pathways will be indicated on the student transcript as a Concentration in Chemistry. Click on the indicated Pathways below to view the Recommended Sequence of Courses.

- **Chemistry: Science** (The courses included in this concentration pathway allow for a successful transition to a bachelor's degree in chemistry, general science, or other chemistry-related fields.)

## Liberal Arts & Sciences (A.A.): Communication Concentration Pathway

Successful completion of this pathway will be indicated on the student transcript as a Concentration in Communication. Students should work with the program advisor to develop the Recommended Sequence of Courses.

- **Communication** (Completion of this concentration pathway allows students to successfully transfer to a bachelor's degree in communication-related fields such as communication, marketing, public relations, or media studies to name a few.)

## Liberal Arts & Sciences (A.A.): English Concentration Pathway

Successful completion of this pathway will be indicated on the student transcript as a Concentration in English. Students should work with the program advisor to develop the Recommended Sequence of Courses.

- **English** (Completion of this concentration pathway allows for a seamless transfer into a bachelor's degree in English, professional writing, or other literature or humanities-focused program.)

## Liberal Arts & Sciences (A.A.): History Concentration Pathway

Successful completion of the History Concentration Pathway will be indicated on the student transcript as a Concentration in History. Click on the indicated Pathway below to view the Recommended Sequence of Courses.

- **History** (Completion of this concentration pathway allows for a seamless transfer into a bachelor's degree in History, Secondary education - History program, historical research, or other history-related programs.)

**Pathway:** Liberal Arts

**Type:** Associate of Arts

## General Education Requirements

CIT 100 or other higher-level CIT course or other MAT course

Course Code	Title	Credits
ACP 100	Academic and Career Planning	1
ENG 110	English Composition I**	3
	ENG 200 or ENG 205	3
	COM 101 or ENG 205 or other COM course suitable for transfer	3
	MAT 116 or MAT 126 or MAT 127 or MAT 145 or MAT 200	3
CIT 100	Microcomputer Applications	3
	Elective - Social Science (Track 1)	3
	Elective - Social Science (Track 2)	3
	Elective - Humanities (Track 1)	3
	Elective - Humanities (Track 1 or Track 2)	3
	Elective - Science 3 or 4 Credits	3-4
	Elective - Humanities or Social Science	3
	Elective - Open	3

## Science Electives

(Choose: one 4-credit lecture and corresponding lab or one 3-credit natural science course acceptable for transfer.)

Course Code	Title	Credits
AST 100	Introduction to Astronomy	3
BIO 102	Life Science	3
	BIO 104 and BIO 114	4
	BIO 106 and BIO 116	4
	BIO 108 and BIO 118	4
	BIO 202 and BIO 212	4
	BIO 204 and BIO 214	4
	BIO 206 and BIO 216	4
	BIO 207 and BIO 217	4
	BIO 208 and BIO 218	4
CHM 106	Introductory Chemistry	4
CHM 110	Survey of Organic and Biochemistry	4
CHM 120	General Chemistry I	4
CHM 122	General Chemistry II	4
	GLG 102 and GLG 103	4
	PHY 102 and PHY 103	4
	PHY 110 and PHY 111	4
	PHY 115 and PHY 116	4
	PHY 120 and PHY 121	4
	PHY 130 and PHY 131	4

## Social Science Track 1 Electives

Course Code	Title	Credits
CIV 100	Western Civilization: Ancient through Renaissance**	3
CIV 110	Western Civilization: Renaissance to Present**	3
CIV 200	Ancient Rome and the Barbarians	3
GEO 100	Introduction to Geography	3
GEO 110	World Regional Geography	3
GOV 100	Introduction to American National Government**	3
GOV 210	Current Events and Contemporary Issues	3
HIS 100	U.S. History I: Discovery through Reconstruction**	3
HIS 110	U.S. History II: Reconstruction to Present**	3
HIS 200	American Immigration	3
HIS 205	American Popular Culture	3
HIS 210	The Civil War and Reconstruction	3
HIS 215	History through Film	3
HIS 220	The Vietnam War	3
HIS 250	World War II through Film	3

## Social Science Track 2 Electives

Course Code	Title	Credits
ANT 100	Introduction to Cultural Anthropology**	3
CRJ 105	Institutional and Community Corrections	3
CRJ 110	Introduction to Criminal Justice	3
CRJ 115	Ethics in Criminal Justice	3
CRJ 150	Juvenile Justice	3
CRJ 175	Constitutional Law	3
CRJ 215	Criminal Law and Procedure	3
CRJ 225	Criminological Theory	3
CRJ 235	Criminal Investigation and Policing	3
CRJ 260	Deviance & Victimology	3
ECO 100	Macroeconomics	3
ECO 110	Microeconomics	3
PLG 100	Introduction to Paralegal Studies	3
PLG 110	Ethics for Paralegals	3
PSY 100	General Psychology**	3
PSY 120	Introduction to Educational Psychology	3
PSY 130	Human Development Across the Lifespan	3
PSY 200	Abnormal Psychology	3
PSY 210	Psychology of Aging	3
PSY 215	Death and Dying	3
PSY 220	Introduction to Counseling	3
PSY/ADD 225	Introduction to Chemical Dependency Counseling	3
SOC 100	Introduction to Sociology**	3
SOC 200	Contemporary Social Issues	3
SOC 205	Race, Class, and Gender in Society	3
SOC/ADD 115	Chemical Dependency & Addictions	3
SOC/ADD 125	Drugs in Society	3
SWK 135	Families in Society	3
SWK 210	Social Welfare	3
SWK 225	Ethics in the Social Sciences	3

## Humanities Track 1 Electives

Course Code	Title	Credits
ART 101	Introduction to Art History**	3
PHI 110	Introduction to Philosophy**	3
REL 100	World Religions/Religious Studies	3
MUS 100	Introduction to Music	3

## Humanities Track 2 Electives

Course Code	Title	Credits
ART 105	Drawing Fundamentals	3
ART 110	Introduction to Painting and Sculpting**	3
ASL 101	American Sign Language I	3
ENG 205	Research Writing	3
ENG 215	Creative Writing	3
ENG 230	Survey of American Literature I	3
ENG 235	Survey of American Literature II	3
ENG 240	Survey of British Literature I	3
ENG 245	Survey of British Literature II	3
ENG 250	Women and Literature	3
ENG 255	Literature for Children and Adolescents	3
ENG 271	World Literature	3
FLM 110	Introduction to American Cinema	3
FRE 101	French I	3
FRE 102	French II	3
GER 101	Elementary German I	3
GER 102	Elementary German II	3
SPA 101	Spanish I	3
SPA 102	Spanish II	3
SPA 203	Spanish III	3
HUM 100	Introduction to Humanities	3
MUS 200	Popular American Music in the Twentieth Century	3
PHI 100	Critical Thinking	3
PHI 200	Introduction to Ethics	3
PHI 240	Bioethics	3
PHI 245	Symbolic Logic	3
REL 200	Understanding the Bible	3
REL 235	Philosophy of Religion	3
SWK 225	Ethics in the Social Sciences	3
THR 130	Acting 1: Introduction to Stage Movement	3
THR 210	Improvisation and Creativity	3

*Note: Students are responsible for determining the transferability of courses to a particular program at another institution.*

Course Sequencing

## Semester 1

Course Code	Title	Credits
ACP 100	Academic and Career Planning	1
CIT 100	Microcomputer Applications	3
ENG 110	English Composition I**	3
	MAT 116 or MAT 126 or MAT 127 or MAT 145 or MAT 200	3
	Elective - Social Science (Track 1)	3
	Elective - Open	3

## Semester 2

Course Code	Title	Credits
	ENG 200 or ENG 205	3
	COM 101 or ENG 205 or other COM course suitable for transfer	3
	Elective - Humanities (Track 1)	3
	Elective - Open	3
	Elective - Open	3

## Semester 3

Course Code	Title	Credits
	Elective - Humanities or Social Science	3
	Elective - Social Science (Track 2)	3
	Elective - Science 3 or 4 Credits	3-4
	Elective - Open	3
	Elective - Open	3

## Semester 4

Course Code	Title	Credits
	Elective - Humanities (Track 1 or Track 2)	3
	Elective - Open	3
	Elective - Open	3
	Elective - Open	3
	Elective - Open	3

# Nanotechnology Option

Nanoscience and nanotechnology are the study and application of extremely small things and can be used across all the other science fields, such as chemistry, biology, physics, materials science, and engineering. To learn more about nanotechnology, visit <http://www.cneu.psu.edu/hmWhatIsNano.html>.

Through our partnership with the NACK (Nanotechnology Applications and Career Knowledge) Network and Penn State University Nanotechnology, Penn Highlands is able to connect its students with coursework and careers in the growing field of nanotechnology.

## Nanotechnology Program Objectives

Upon completion of the program, the student will be able:

- To demonstrate leadership skills based on a sense of professional and personal integrity, self-esteem, and willingness to receive and give constructive praise and criticism.
- To apply information literacy skills.
- To demonstrate strong communications and critical thinking skills, including reading, writing, organizing, evaluating, problem solving, editing, and presenting skills.
- To demonstrate skills in mathematics and logic applied to technology.
- Operate nanofabrication processing equipment with a focus on safety, environmental and health issues.
- Demonstrate a thorough understanding of the materials handling procedures related to advanced electronic and manufacturing technologies.
- Identify material and physical hazards associated with basic semiconductor processing equipment.
- Communicate advanced technical concepts in an oral, written, and graphical form.
- Use the computer in reporting, analyzing, and researching technical information.
- Provide an active problem-solving link between engineers and production personnel.
- Record relevant information in a working lab notebook.
- Identify industries using nanofabrication technology such as opto-electronics, biomedical, sensors, flat panel displays, information storage, micro-electromechanical devices, micro-fluidics, solar cells, and microelectronics.

## Application Process

Eligibility Requirements for the program include:



- Have a history of course completion.
- Demonstrate maturity.
- Have good interpersonal skills.
- Have no history of disciplinary problems.
- Work well with others.
- Have shown a genuine interest in the NMT field and be registered as a nanofabrication student.
- Complete the required prerequisites.
- Have a minimum 2.5 GPA.
- Obtain a recommendation from the program lead.

To be accepted into the PSU Nanotechnology capstone program, students must:

- Contact the Office of Instruction at Penn Highlands for program application instructions and information at 814.262.6486.
- Apply to Penn State and provide the necessary documentation, including a letter of reference.
- If accepted, students must provide acceptance letter to the Registrar for course scheduling.
- Pay the required tuition, fees, and materials for the program. Costs will include room and board for the semester at Penn State Main Campus, a program fee of \$2,500, Penn Highlands' tuition and fees, books, and materials.

Students may contact the Penn State University NMT program directly for more information and the application: Sue Barger, Administrative Support Coordinator, 814.865.9635, sbarger@enr.psu.edu.

## Course Information

Students pursuing certification in Nanotechnology will complete the Liberal Arts and Science Degree and then enroll in the following courses offered through the Pennsylvania Nanofabrication Manufacturing Technology (NMT) Partnership at Penn State University's Main Campus. Courses are offered in one 15-week semester at Penn State University in State College, PA. Students must make arrangements to attend classes in State College, including room and board.

## Semester 5 (Nanotechnology Option)

These courses are held on the main campus of Penn State University.

<b>Course Code</b>	<b>Title</b>	<b>Credits</b>
ELT 220	Material, Safety, and Equipment Overview for Nanofabrication	3
ELT 221	Basic Nanofabrication Processes	3
ELT 222	Materials in Nanotechnology	3
ELT 223	Lithography for Nanofabrication	3
ELT 224	Materials Modification in Nanofabrication	3
ELT 225	Characterization, Testing of Nanofabricated Structures and Materials	3
	<b>Total credits:</b>	<b>61-62</b>