

PHYSICS

ASSOCIATE IN SCIENCE (AS) DEGREE

PHYSICS CONCENTRATION

For students considering a major in PHYSICS upon transferring to a four-year institution, the Associate of Science degree with a PHYSICS concentration from ACC offers a strong foundation, providing essential courses that serve as building blocks for advanced study.

A concentration in PHYSICS can lead to diverse career opportunities, including research, engineering, data science, healthcare, energy, finance, defense, education, and consulting, leveraging analytical and problem-solving skills across industries.

Program Objectives

Upon graduating from ACC with an Associate of Science degree with a concentration in PHYSICS, students will:

1. **Demonstrate** a strong foundation in physics by applying mathematical, analytical, and experimental methods to solve scientific problems.
2. **Apply** critical thinking and technical skills for data analysis, laboratory research, and computational applications in STEM fields.
3. **Communicate** scientific concepts effectively and be prepared for further academic study or entry-level careers in physics, engineering, and related disciplines.

It is strongly recommended that students consult with an ACC Academic Advisor in PHYSICS to ensure they meet specific program requirements, objectives, and transfer goals.

PROGRAM REQUIREMENTS (PR)

CEM 121	GENERAL & INORGANIC CHEMISTRY (4/7)
CEM 122	INORGANIC CHEMISTRY & QUALITATIVE ANALYSIS (4/7)
MTH 131	ANALYTIC GEOMETRY & CALCULUS I (5/5)
MTH 132	ANALYTIC GEOMETRY & CALCULUS II (5/5)
MTH 221	C++ PROGRAMMING (4/5)
MTH 231	ANALYTIC GEOMETRY & CALCULUS III (5/5)
MTH 232	DIFFERENTIAL EQUATIONS (4/4)
PHY 221	PHYSICS I (5/7)
PHY 222	PHYSICS II (5/7)

GENERAL EDUCATION

DEGREE DISTRIBUTION REQUIREMENTS

GROUP 1 (G1) – ENGLISH COMPOSITION

Six (6) semester credits are required, including ENG 111 or 121 and 112, 122 or 123

GROUP 2 (G2) – SCIENCES/MATHEMATICS

Twenty (20) semester credits are required, including at least one laboratory science course. Courses will be taken in more than one academic discipline (course abbreviation/prefix). Note: Two (2) courses in Natural Sciences, including one with laboratory experience (from two disciplines), in addition to MTH 118 or MTH 121 or higher, are required to achieve the Michigan Transfer Agreement (MTA).

GROUP 3 (G3) – SOCIAL SCIENCES & HUMANITIES/FINE ARTS

Ten (10) semester credits are required in combination from both of these groups, with a minimum of three (3) credits from each

group. Political Science or U.S. History courses used to satisfy the American Government requirement can be included. Courses will be taken in more than one academic discipline (course abbreviation/prefix). Note: Two (2) courses in Social Sciences (from two disciplines) and two (2) courses in Humanities and Fine Arts (from two disciplines and excluding studio and performance classes) are required for the Michigan Transfer Agreement (MTA).

ELECTIVE CREDITS (EC)

The remainder of credits for an AS degree with this concentration should be oriented toward additional courses in PHYSICS with prefixes **CEM**, **MTH**, **PHY**, and **EGR** when available in consultation with an ACC Academic Advisor in PHYSICS.

RECOMMENDED COURSES - SEQUENCE

GROUP 1-4 REQUIREMENTS + ELECTIVE CREDITS

Meets ACC degree distribution and MTA requirements
62 CREDITS - 73 CONTACT HOURS

YEAR 1 FALL	15 CREDITS
G1	ENG 111 ENGLISH COMPOSITION I (3/3)
G2 PR	CEM 121 GENERAL & INORGANIC CHEMISTRY (4/7)
G2 PR	MTH 131 ANALYTIC GEOMETRY & CALCULUS I (5/5)
G3	HUM/FA HUMANITIES/FINE ARTS (3/3)

YEAR 1 SPRING	16 CREDITS
G1	ENG 112 ENGLISH COMPOSITION II (3/3)
G2 PR	CEM 122 INORGANIC CHEM & QUAL ANALYSIS (4/7)
G2 PR	MTH 132 ANALYTIC GEOMETRY & CAL II (5/5)
G2 PR	MTH 221 C++ PROGRAMMING (4/5)

YEAR 2 FALL	16 CREDITS
G2 PR	PHY 221 PHYSICS (5/7)
G2 PR	MTH 231 ANALYTIC GEOMETRY & CAL III (5/5)
G3	PLS 221 AMERICAN GOVERNMENT & POLITICS (3/3)
G3	SOC SCI SOCIAL SCIENCE (3/3)

YEAR 2 SPRING	15 CREDITS
G2 PR	MTH 232 DIFFERENTIAL EQUATIONS (4/4)
G2 PR	PHY 222 PHYSICS (5/7)
G3	HUM/FA HUMANITIES/FINE ARTS (3/3)
EC	ELECTIVE GENERAL ELECTIVE (3/3)