CHEMISTRY

ASSOCIATE IN SCIENCE (AS) DEGREE

CHEMISTRY CONCENTRATION

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

A concentration in CHEMISTRY can lead to diverse career opportunities, including healthcare, pharmaceuticals, environmental science, research, and industry, such as roles in analytical chemistry, laboratory technology, pharmaceutical science, environmental consulting, chemical engineering, and quality control.

Program Objectives

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

1. **Demonstrate** a foundational understanding of chemical principles, including organic, inorganic, physical, and analytical chemistry.
2. **Apply** laboratory and analytical skills to perform experiments, analyze data, and apply chemical theories in practical situations.
3. **Apply** scientific knowledge and effective communication skills to prepare for further academic study or careers in chemistry, healthcare, environmental science, and related fields.

It is strongly recommended that students consult with an ACC Academic Advisor in CHEMISTRY 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)**
CEM 221	**ORGANIC CHEMISTRY (5/7)**
CEM 222	**ORGANIC CHEMISTRY (5/7)**
MTH 131	**ANALYTICAL GEOMETRY & CALCULUS I (5/5)**
MTH 132	**ANALYTICAL GEOMETRY & CALCULUS II (5/5)**
MTH 231	**ANALYTICAL 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 CHEMISTRY with prefixes **CEM, MTH, and PHY** when available in consultation with an ACC Academic Advisor in CHEMISTRY.

RECOMMENDED COURSES - SEQUENCE
GROUP 1-4 REQUIREMENTS + ELECTIVE CREDITS

Meets ACC graduation distribution and MTA requirements
65 CREDITS - 79 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	15 CREDITS	
G1	ENG 112	ENGLISH COMPOSITION II (3/3)
G2 PR	**CEM 122**	**INORGANIC CHEM & QUAL ANALYSIS (4/7)**
G2 PR	**MTH 132**	**ANAL GEOMETRY & CALCULUS II (5/5)**
G3	SOC SCI	SOCIAL SCIENCE (3/3)

YEAR 2 FALL	18 CREDITS	
G2 PR	**CEM 221**	**ORGANIC CHEMISTRY (5/7)**
G2 PR	**MTH 231**	**ANAL GEOMETRY & CALCULUS III (5/5)**
G2 PR	**PHY 221**	**PHYSICS (5/7)**
G3	PLS 221	AMERICAN GOVERNMENT & POLITICS (3/3)

YEAR 2 SPRING	17 CREDITS	
G2 PR	**CEM 222**	**ORGANIC CHEMISTRY (5/7)**
G2 PR	**MTH 232**	**DIFFERENTIAL EQUATIONS (4/4)**
G2 PR	**PHY 222**	**PHYSICS (5/7)**
G3	HUM/FA	HUMANITIES/FINE ARTS (3/3)