Pittsburg State University
Arts and Sciences Program Guide

Polymer Chemistry Emphasis

Degree: Bachelor of Science  
Major: Chemistry  
Emphasis: Polymer Chemistry

Core Requirements (25 hours)

Chemistry Courses:
- CHEM-215 General Chemistry I (3 hours)  
- CHEM-216 General Chemistry I Laboratory (2 hours)  
- CHEM-225 General Chemistry II (3 hours)  
- CHEM-226 General Chemistry II Laboratory (2 hours)  
- CHEM-325 Organic Chemistry I (3 hours)  
- CHEM-326 Organic Chemistry Laboratory (2 hours)  
- CHEM-335 Organic Chemistry II (3 hours)  
- CHEM-336 Organic Chemistry II Laboratory (2 hours)  
- MATH-150 Calculus I (5 hours)

Emphasis Area

Chemistry Courses:
- CHEM-423 Descriptive Inorganic Chemistry (3 hours)  
- CHEM-445 Analytical Chemistry (3 hours)  
- CHEM-446 Analytical Chemistry Laboratory (2 hours)  
- CHEM-593 Physical Chemistry I (3 hours)  
- CHEM-594 Physical Chemistry I Laboratory (2 hours)  
- CHEM-601 Chemistry Colloquium (0-1 hour)  
Note: One hour CHEM 601 Chemistry Colloquium is required.
- CHEM-611 Senior Review and Assessment (1 hour)  
- CHEM-625 Polymer Synthesis and Characterizations (3 hours)  
- CHEM-626 Polymer Synthesis and Characterizations Laboratory (2 hours)  
- CHEM-680 Physical Properties of Polymers (3 hours)

Select 3 hours from:
- CHEM-640 Polyurethanes and Their Applications (3 hours)  
- CHEM-650 Conducting Polymers and Their Applications (3 hours)  
- CHEM-683 Biopolymers (3 hours)  
- CHEM-687 Polymers in Nanotechnology (3 hours)

Other Requirements:
- PHYS-104 Engineering Physics I (4 hours)  
- or PHYS-100 College Physics I (4 hours)  
- and PHYS-130 Elementary Physics Laboratory I (1 hour)  
- PHYS-105 Engineering Physics II (4 hours)  
- or PHYS-101 College Physics II (4 hours)  
- and PHYS-131 Elementary Physics Laboratory II (1 hour)

A minor is not required. Degree requires a minimum of 120 credit hours. Student should seek advisement to identify appropriate electives or minor to achieve this minimum.

Pitt State Pathway Requirements

Core Elements (12 hours)

A0 - Written Communications
- ENGL-101 English Composition (3 hours)  
- ENGL-299 Introduction to Research Writing (3 hours)

B0 - Verbal Communication
- COMM-207 Speech Communication (3 hours)

C0 - Quantitative/Analytic Methods
- MATH-110 College Algebra with Review (5 hours)  
- MATH-113 College Algebra (3 hours)  
- MATH-126 Pre-Calculus (4 hours)  
- MATH-133 Quantitative Reasoning (3 hours)  
- MATH-143 Elementary Statistics (3 hours)  
- MATH-150 Calculus I (5 hours)  
- MATH-204 Mathematics for Education I (3 hours)  
- PHIL-207 Critical Thinking (3 hours)  
- PHIL-208 Logic (3 hours)

Essential Studies (23-24 hours minimum)
See notes *1
Notes *1: D-G and cannot be same prefix as major.

D - The Human Experience (3-6 hours)

D1 - Diverse Perspectives
- ENGL-113 General Literature (3 hours)  
- ENGL-114 General Literature (Genre) (3 hours)  
- ENGL-116 General Literature (Theme) (3 hours)  
- ENGL-120 Literature and Film (3 hours)  
- ENGL-250 Introduction to Creative Writing (3 hours)  
- ENGL-315 Mythology (3 hours)  
- ENGL-320 Literature and Film (3 hours)

D3 - Non-Verbal and Creative Expression
- ART-178 Introduction to the Visual Arts (3 hours)  
- ART-188 The Designed World (3 hours)  
- ART-217 Crafts I (3 hours)  
- ART-222 Jewelry Design I (3 hours)  
- ART-233 Drawing I (3 hours)  
- ART-244 Ceramics I (3 hours)  
- ART-266 Sculpture I (3 hours)  
- ART-277 Painting I (3 hours)
__ART-288 Introduction to Art History I (3 hours)
__ART-289 Introduction to Art History II (3 hours)
__ART-311 Art Education (3 hours)
__COMM-105 Performance Appreciation (3 hours)
__COMM-205 Performance Studies (3 hours)
__COMM-395 Theatre History (____) (3 hours)
__HHP-151 Dance Appreciation (3 hours)
__MUSIC-120 Music Appreciation (____) (3 hours)
__MUSIC-121 Introduction to Music Literature (3 hours)
__MUSIC-321 History of Music (3 hours)
__MUSIC-322 History of Music (3 hours)

E - Human Systems (9-12 hours)

E0 - No Companion
__CIS-130 Computer Information Systems (3 hours)
__EDUC-261 Explorations in Education (3 hours)
__EET-247 Computer Programming for Electronic Systems (3 hours)
__MECET-121 Engineering Graphics I (3 hours)
__MGT-101 Introduction to Business (3 hours)

E1 - Diverse Perspectives
__ANTH-101 Introduction to Cultural Anthropology (3 hours)
__GEOG-106 World Regional Geography (3 hours)
__GEOG-300 Elements of Geography (3 hours)
__GEOG-304 Human Geography (3 hours)
__HIST-101 World History to 1500 (3 hours)
__HIST-102 World History from 1500 (3 hours)
__HIST-201 American History to 1865 (3 hours)
__HIST-202 American History from 1865 (3 hours)
__MFGET-405 Quality Control (3 hours)
__MLL-124 French Language and Culture I (3 hours)
__MLL-154 Spanish Language and Culture I (3 hours)
__PHIL-103 Introduction to Philosophy (3 hours)
__PHIL-231 World Religions (3 hours)
__POLS-103 Comparative Politics (3 hours)
__SOC-100 Introduction to Sociology (3 hours)
__WGS-399 Global Women’s Issues (3 hours)

E2 - Social Responsibility
__ECON-191 Issues in Today’s Economy (3 hours)
__ECON-200 Principles of Microeconomics (3 hours)
__ECON-201 Principles of Macroeconomics (3 hours)
__EDTH-330 Technology for Teaching and Learning (3 hours)
__ETECH-502 Engineering Economy (3 hours)
__FCS-230 Consumer Education and Personal Finance (3 hours)
__GT-190 Introduction to Technological Systems (2 hours)
__GT-350 Technology and Civilization (3 hours)
__NURS-303 Introduction to Public Health (3 hours)
__PHIL-105 Ethics (3 hours)
__PHIL-112 Biomedical Ethics (3 hours)
__PHIL-113 Business Ethics (3 hours)
__PHIL-114 Environmental Ethics (3 hours)
__POLS-101 U.S. Politics (3 hours)
__WGS-200 Introduction to Women’s Studies (3 hours)

E4 - Scientific Inquiry
__MFGET-263 Manufacturing Methods I (2 hours)
and __MFGET-268 Manufacturing Methods I Laboratory (1 hour)

F - Natural World (4-5 hours)

F0 - No Companion
__BIOL-617 Environmental Health (3 hours)

F4 - Scientific Inquiry
__BIOL-111 General Biology (3 hours)
and __BIOL-112 General Biology Laboratory (2 hours)
__BIOL-113 Environmental Life Science (4 hours)
__BIOL-211 Principles of Biology I (4 hours)
__CHEM-105 Introductory Chemistry (3 hours)
__CHEM-215 General Chemistry I (3 hours)
__PHYS-100 College Physics I (4 hours)
or __PHYS-104 Engineering Physics I (4 hours)
__PHYS-130 Elementary Physics Laboratory I (1 hour)
__PHYS-160 Physical Geology (3 hours)
and __PHYS-165 Physical Geology Laboratory (1 hour)
__PHYS-166 Meteorology (3 hours)
and __PHYS-167 Meteorology Laboratory (1 hour)
__PHYS-171 Physical Science (3 hours)
and __PHYS-172 Physical Science Laboratory (1 hour)
__PHYS-175 Descriptive Astronomy (3 hours)
and __PHYS-176 Astronomy Laboratory (1 hour)
__PHYS-375 Solar System Astronomy (3 hours)

G - Wellness Strategies (4-6 hours)

G0 - No Companion
__EXSCI-200 Introduction to Exercise Science (1 hour)
__FCS-203 Nutrition and Health (3 hours)
__HHP-150 Lifetime Fitness Concepts (1 hour)

G3 - Non-Verbal and Creative Expression
__DANCE-200 Dance (____) (1-3 hours)

G4 - Scientific Inquiry
__PSYCH-155 General Psychology (3 hours)

H - Gorilla Gateway

H0 - No Companion
__UGS-150 Gorilla Gateway (2)

I - Pathway Elective (3 hours)

See notes *2

Notes *2: Elective can be from any D,E,F, or G Essential Studies and can be from the same prefix as major or repeat of prefix used in Essential Studies.

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