MAJOR
The degree in Chemistry is designed for those who wish to work as laboratory scientists or for those who are interested in pursuing research or graduate studies. The program is thorough and rigorous, and the explorations of a wide variety of career possibilities in research areas are possible. There are two well equipped research labs and students are encouraged to be involved in research.

PRACTICAL EXPERIENCE
Opportunities that are not part of any regular program exist on and off campus to provide sound practical experience, such as student assistants, participation in the campus-tutoring programs, and field studies. Internships at numerous facilities are available to students to develop and apply their skills.

FACILITIES AND RESOURCES
The Rhoades Science Center includes a greenhouse for work in biology and botany, a planetarium and laboratories for biology, chemistry, earth science, physics, computer science, and photography studies. Students have access to:
- A fully equipped Aquatic Macro invertebrate Laboratory and Biomedical Research laboratory
- Weather stations
- River gauge station
- Fish hatchery
- The dam and reservoir at Lake Ashtabula
- The Soil Conservation Service
- North Dakota State Extension Service.
- Biology faculty have ongoing connections with North Dakota Department of Health, ND Parks and Recreation, Northern Prairie
- Wildlife Research Center, and the US Army Corps of engineers and with faculty involved in graduate programs at UND and NDSU.

QUOTE: “Dr. Stickler has not only shown tremendous knowledge in his content area but has shown a special ability to teach his students with great enthusiasm and passion.”

DR. DONALD C. AND MARJORIE MEREDITH SCHOLARSHIP
- Total $12,000 available
- Designed to award Math or Science majors

PRE-PROFESSIONAL CLUB
You are invited to join the VCSU Pre-Professional Club upon arrival as VCSU. This club is for students interested in continuing their education in the medical field (including nursing), law, accounting, and graduate school. This club provides support for students going through the application process and provide opportunities to practice aptitude tests such as the GRE, mCAT, LSAT, and DAT. Volunteer work, job shadowing, and educational & leadership opportunities are also part of the club’s activities. The goal is for students to support each other, learn from other students’ experiences, thus making your applications stronger, and increase your chance for successful admission into your program of choice.

TECHNOLOGY
- Notebook computers with multimedia capabilities
- Digital cameras, video cameras, and other peripherals
- Blackboard online learning environments
- Hydrostatic body composition, Lactate analysis
- Infrared spectroscopy, Molecular spectroscopy
- Potentiometry, Refractometry & Polarimetry
- Organic structure software
- Excel data analysis

CAREER SERVICES PROVIDES
- Career, job search, placement services free to all students
- Field trips, employer on-campus visits
- Information, networking opportunities and skill development
- Visit www.vcsu.edu/careerservices/

CAREER OPPORTUNITIES
Chemistry

MAJOR

The Chemistry major is designed to give you a broad preparation and experience for a variety of Chemistry related fields. We also have an emphasis in preparing you for professional schools and graduate work.

LEARNING OUTCOMES

1. Demonstrate a fundamental knowledge of the major concepts in chemistry.
2. Exhibit critical thinking skills by applying the scientific method to solve problems.
3. Exhibit the ability to read and communicate in a scientific style.
4. Understand the importance of chemistry to themselves and society.

ABILITIES

Problem Solving Obtain, organize, and interpret information to provide creative, critical solutions
Collaboration Ability to work with others
Global Awareness Recognize relationships
Communication Ability to convey information and knowledge
Technology Use, understand, and implement to provide solutions in an information society.

For degree and graduation requirements see pages 39-40.

Chemistry Department Chair
Andre DeLorme, Ph.D.
Rhoades Science Center 203D
(701) 845-7573

General Education Requirements 39 Hours
Communication & Collaboration 9 Hrs
ENGL 110 College Composition I
ENGL 120 College Composition II or ENGL 125 Intro to Professional Wrtg
COMM 110 Fund of Public Speaking or COMM 212 Intercultural Comm
COMM 216 Intercultural Comm

Problem Solving 11-13 Hrs
Mathematics - 3 crs (Select one course)
MATH 165 Calculus I* 4
Lab Science - 8-10 crs (Select two courses)
PHYS 161 Intro College Physics I* & 4
PHYS 162 Intro College Physics II * 4
PHYS 251/L University Physics I/Lab * & 4/1
PHYS 252/L University Physics II/Lab * 4/1

Technology (Select one course) 3 Hrs
CIS 170 Intro to Computer Info Systems
CSCI 127 Intro Java; CSCI 160 Intro Struc

Wellness 2 Hrs
HPER 100 Concepts Fitness & Wellness

Aesthetic Engagement 6 Hrs
Literacies - 3 crs (Select one course)
ENGL 220, 225, 241, 261, 262
HUM 201 Civil, Thought, & Lit Heritage
SPAN 201 2nd Yr I; SPAN 202 2nd Yr II
THEA 110 Intro Theatre; THEA 161 Acting I
Art & Music - 3 crs (Select one course)
ART 110 Introduction to Visual Arts
HUM 202 Fine Arts & Aesthetics
MUS 100 Music Appreciation
MUS 101 Music Fundamentals
MUS 207 History of Rock’n’Roll

Global Awareness & Effective Citizen 6 Hrs
(Select two courses)
COMM 112 Under Media; COMM 114 Human;
ECON 201 Prin Micro; ECON 202 Prin Macro
GEOG 151 Human Geog
HIST 103, 104, 211, 212, 260, 267, 270
POLS 115 Amer Gov; POLS 116 State Gov
PSYC 111 Intro Psyc
SOC 110 Intro to Soc; SOC 111 Intro Anthro

Additional General Education 2 Hrs
Select one additional course from the area of Aesthetic Engagement or Global Awareness or
ART 112 (3), ART 231 (3), ART 281 (3), GEOG 111 (2), MUS 104 (1), MUS 105 (1), MUS 131 (1), MUS 141 (1), PHYS 275 (1), THEA 201 (1-3)

Required Courses 32 Hours
CHEM 121 General Chemistry 5
CHEM 122 General Chemistry 5
CHEM 330 Quantitative Analysis 4
CHEM 341 Organic Chemistry 5
CHEM 342 Organic Chemistry 5
CHEM 411 Physical Chemistry 3
CHEM 421 Physical Chemistry Lab 1
CHEM 425 Inorganic Chemistry 4

Directed Electives 8 Hrs
CHEM 331 Quantitative Analysis 4
CHEM 360 Elements of Biochemistry 4
CHEM 395 Laboratory Preparation & Mgmt 1
CHEM 412 Physical Chemistry 3
CHEM 422 Physical Chemistry Lab 1
CHEM 494 Undergraduate Research 1-4
CHEM x94 Independent Study 1-4
BA Language/Cultural Studies -or- 16 hrs
BS Related Field

Total General Education 39 Hrs
Total Major Requirement 40 Hrs
Total Credits Needed to Graduate 120 Hrs