



# Chemistry

## About this Major

VCSU's Chemistry degree is designed for those interested in working as laboratory scientists or pursuing research or graduate studies. The program is thorough and rigorous, and 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.

## Meet a Student



VCSU is where I found my place, my role and myself. I'm sure every student here can say the same, that their passions for what they love and are interested in has been supported while attending VCSU. I transferred to VCSU my sophomore year. I remember visiting the chemistry lab on campus and thinking "you're telling me I can be in here working with these things?" Not only have I had many opportunities to learn from amazing professors, but I have also been able to teach and tutor chemistry, physics and STEM students. - Lindsey Kiecker, Jamestown, N.D.,

## Get Involved in your Major

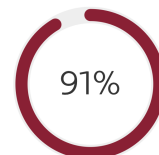
**Pre-Professional Club** You are invited to join the VCSU Pre-Professional Club. This club is for students interested in continuing their education in the medical field (including nursing), law, accounting, and graduate school. This club provides support for students going through the application process and provides opportunities to practice aptitude tests such as the GRE, mCAT, LSAT, and DAT. Volunteer work, job shadowing, and educational and 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.



## Jobs with a Chemistry Degree

**4,856 jobs**

openings in this career field last year in the upper Midwest



of jobs posted in this career field in the upper Midwest require a Bachelor's degree

**\$61,200 annually**

median salary for the chemistry career field in the upper Midwest region

Career opportunities may include:

- Biochemist
- Chemist
- Crime Lab Analyst
- Environmental Health Specialist
- Food Scientist/Technologist
- Forensic Chemist
- Industrial Hygienist
- Medical Technologist
- Optometrist
- Patent Agent
- Pharmaceutical Sales Representative
- Pharmacist
- Physician
- Quality Control Manager
- Science Laboratory Technician
- Soil Scientist
- Technical Writer
- Toxicologist



- Veterinarian
- Water/Wastewater Plant Manager

## 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. Students can do (and have done) internships at Dakota Gasification Company in Beulah, N.D.; American Crystal Sugar in Hillsboro, N.D.; and Minnesota Valley Testing Laboratories in Bismarck, N.D. They also have completed summer REUs (Research Experience for Undergrads) at NDSU and UND.

## Contact Information

### Department Chair

Dr. Nicholas Galt, [nicholas.galt@vcsu.edu](mailto:nicholas.galt@vcsu.edu), (701) 845-7459

### Faculty Contact

Dr. Teather Sundstrom, [teather.sundstrom@vcsu.edu](mailto:teather.sundstrom@vcsu.edu), (701) 845-7458

### Department Location

Rhoades Science Center 203

### Schedule your visit today!

<http://visit.vcsu.edu/> (701) 845-7101 or (800) 532-8641

## Plan of Study

### Fall start - even years

#### First Year

| Fall                   | Credits   | Spring                  | Credits   |
|------------------------|-----------|-------------------------|-----------|
| Art and Music (Gen Ed) | 3         | CHEM 122                | 5         |
| CHEM 121               | 5         | COMM 110 (Gen Ed)       | 3         |
| CIS 170 (Gen Ed)       | 3         | ENGL 120 (Gen Ed)       | 3         |
| ENGL 110 (Gen Ed)      | 3         | HPER 100 (Gen Ed)       | 2         |
| UNIV 150               | 1         | Social Science (Gen Ed) | 3         |
|                        | <b>15</b> |                         | <b>16</b> |

#### Second Year

| Fall   | Credits   | Spring            | Credits   |
|--|-----------|-------------------|-----------|
| Additional Humanities or Social Science (Gen Ed) | 2         | CHEM 331          | 4         |
| CHEM 330   | 4         | MATH 165 (Gen Ed) | 4         |
| Literacies (Gen Ed)                              | 3         | Minor course      | 3         |
| PHYS 211 (Gen Ed)                                | 4         | PHYS 212 (Gen Ed) | 4         |
|  | <b>13</b> |                   | <b>15</b> |

#### Third Year

| Fall     | Credits | Spring   | Credits |
|----------|---------|----------|---------|
| CHEM 341 | 5       | CHEM 342 | 5       |

|              |           |                         |           |
|--------------|-----------|-------------------------|-----------|
| CHEM 411     | 4         | CHEM 425                | 4         |
| Minor course | 3         | Minor course            | 3         |
| Minor course | 3         | Social Science (Gen Ed) | 3         |
|              | <b>15</b> |                         | <b>15</b> |

#### Fourth Year

| Fall         | Credits   | Spring       | Credits   |
|--------------|-----------|--------------|-----------|
| CHEM 360     | 4         | Elective     | 4         |
| CHEM 491     | 2         | Elective     | 3         |
| Elective     | 3         | Elective     | 3         |
| Minor course | 3         | Minor course | 3         |
| Minor course | 3         | Minor course | 3         |
|              | <b>15</b> |              | <b>16</b> |

**Total Credits 120**

### Fall start - odd years

#### First Year

| Fall                   | Credits   | Spring                  | Credits   |
|------------------------|-----------|-------------------------|-----------|
| Art and Music (Gen Ed) | 3         | CHEM 122 (Gen Ed)       | 5         |
| CHEM 121 (Gen Ed)      | 5         | COMM 110 (Gen Ed)       | 3         |
| CIS 170 (Gen Ed)       | 3         | ENGL 120 (Gen Ed)       | 3         |
| ENGL 110 (Gen Ed)      | 3         | HPER 100 (Gen Ed)       | 2         |
| UNIV 150               | 1         | Social Science (Gen Ed) | 3         |
|                        | <b>15</b> |                         | <b>16</b> |

#### Second Year

| Fall   | Credits   | Spring                  | Credits   |
|--|-----------|-------------------------|-----------|
| Additional Humanities or Social Science (Gen Ed) | 2         | CHEM 342                | 5         |
| CHEM 341   | 5         | Minor Course            | 3         |
| Literacies (Gen Ed)                              | 3         | PHYS 212                | 4         |
| PHYS 211   | 4         | Social Science (Gen Ed) | 3         |
|  | <b>14</b> |                         | <b>15</b> |

#### Third Year

| Fall         | Credits   | Spring            | Credits   |
|--------------|-----------|-------------------|-----------|
| CHEM 330     | 4         | CHEM 331          | 4         |
| CHEM 360     | 4         | MATH 165 (Gen Ed) | 4         |
| Minor Course | 3         | Minor Course      | 3         |
| Minor Course | 3         | Minor Course      | 3         |
|              | <b>14</b> |                   | <b>14</b> |

#### Fourth Year

| Fall         | Credits | Spring   | Credits |
|--------------|---------|----------|---------|
| CHEM 411     | 4       | CHEM 425 | 4       |
| CHEM 491     | 2       | Elective | 3       |
| Elective     | 3       | Elective | 3       |
| Minor Course | 4       | Elective | 3       |



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|              |           |              |           |
|--------------|-----------|--------------|-----------|
| Minor Course | 3         | Minor Course | 3         |
|              | <b>16</b> |              | <b>16</b> |

**Total Credits 120**

Please note: This plan is intended for general information only. Students are strongly encouraged to meet with their academic advisor each semester before registration.

## 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. Exhibit the ability to collaborate
5. Understand the importance of chemistry to themselves and society.