

Department of Coatings and Polymeric Materials

www.ndsu.edu/cpm

The Department of Coatings and Polymeric Materials is internationally known for the excellence of its educational and research programs. Close ties with industry and government agencies are maintained to assure that teaching and research programs remain in step with the rapidly changing science and technology of the area.

Knowledge of polymers is a desirable foundation for a career as a professional chemist in industry. More than 80 percent of industrial chemists work with polymers, and many physicists and engineers also work with polymer-related materials.

Within the broad area of polymers, the department puts special emphasis on coatings. Coatings are so often encountered in everyday life that they may be taken for granted. Paint on walls, coatings on automobiles or aircraft, liners for the interior of beverage cans, coatings to protect bridges from corrosion, coatings on magnetic tapes and computer chips, and body implants are only a few selected examples.

Closely related fields are adhesives, printing inks, plastics, cosmetics, food, and biotechnology. Only five other universities in the U.S. offer programs in coatings and employment opportunities far exceed the number of graduates.

To encourage students to study in the field, companies and organizations fund undergraduate scholarships of up to \$2,500 a year. Entering freshmen and transfer students apply for these scholarships through the Office of Admission. Undergraduates already enrolled at NDSU apply through the department.

While a minor is available, the Department of Coatings and Polymeric Materials does not offer an undergraduate major. Undergraduates interested in polymers and coatings are encouraged to major in Chemistry (<http://bulletin.ndsu.edu/past-bulletin-archive/2014-15/undergraduate/colleges/science-mathematics/chemistry-biochemistry/chemistry>) or Mechanical Engineering (<http://bulletin.ndsu.edu/past-bulletin-archive/2014-15/undergraduate/colleges/engineering/mechanical-engineering/mechanical-engineering>) (ME). Coatings and Polymeric Materials offers graduate level programs leading to the M.S. and Ph.D. degrees in Coatings and Polymeric Materials, or a Ph.D. in Materials Science and Nanotechnology.

The Coatings and Polymeric Materials minor provides excellent preparation for professional employment at the B.S. level and for graduate school. Students are strongly advised to plan their programs so that the entire coatings course (CPM 474 Coatings I, CPM 475 Coatings II) and laboratory sequence (CPM 484 Coatings I Laboratory, CPM 485 Coatings II Laboratory) can be taken during the same academic year. Chemistry majors with the CPM minor also are required to take polymer synthesis (CPM 473 Polymer Synthesis) prior to graduation.

Minor Requirements

Coatings & Polymeric Materials Minor

Minor Requirements

Required Credits: 16

| Required Courses: Select 16 credits from the following: | | 16 |
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| CHEM 341 | Organic Chemistry I | |
| CHEM 341L | Organic Chemistry I Laboratory | |
| CHEM 342 | Organic Chemistry II | |
| CHEM 342L | Organic Chemistry II Laboratory | |
| CPM 451 | Laboratory, Chemical, Radiation, and Biological Safety | |
| CPM 472 | Environment and Chemical Industries | |
| CPM 473 | Polymer Synthesis | |
| CPM 474 | Coatings I | |
| CPM 475 | Coatings II | |
| CPM 483 | Polymer Practicum | |
| CPM 484 | Coatings I Laboratory | |
| CPM 485 | Coatings II Laboratory | |
| CPM 486 | Corrosion and Materials | |
| CPM 487 | Corrosion and Materials Laboratory | |
| Total Credits | | 16 |

Minor Requirements and Notes:

- A minimum of 8 credits must be taken at NDSU.
- If CHEM 341 Organic Chemistry I/CHEM 341L Organic Chemistry I Laboratory and CHEM 342 Organic Chemistry II/CHEM 342L Organic Chemistry II Laboratory are required for Major degree, the credits cannot also count toward a minor in Coatings and Polymeric Materials. CHEM 353 Majors Organic Chemistry Laboratory I and CHEM 354 Majors Organic Chemistry Laboratory II can be substituted for CHEM 341L Organic Chemistry I Laboratory and CHEM 342L Organic Chemistry II Laboratory.
- Chemistry majors taking CPM minor are required to have CPM 473 Polymer Synthesis.
- One CPM Laboratory Course (CPM 484 Coatings I Laboratory, CPM 485 Coatings II Laboratory, CPM 483 Polymer Practicum, CPM 487 Corrosion and Materials Laboratory)