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| **特拉华大学（University of Delaware）** | [返回](http://59.72.66.9/services/wjzx/ktyj/mgdx.html) |
| 开课系Department of Chemistry and Biochemistry  Introductory Chemistry Courses [List](http://www.udel.edu/chem/ugrad/genchem.html#majors#majors) of majors and course required.  提供7种不同的化学入门课程   Seven different entry-level sequences of introductory chemistry are offered. Each is designed for a different target audience, usually differentiated by major. Although topical coverage is frequently similar, each sequence is taught at a different level of difficulty, requiring different levels of ability, motivation, and effort, as well as different levels of high school preparation in mathematics and chemistry, on the part of the student. Each course in the regular sequences consists of a large lecture section (or sections), which is split up into several smaller laboratory sections (24 students maximum), which are taught by graduate teaching assistants. Some of the courses (CHEM-105, CHEM-111/112) are also split up into smaller recitation sections. The Honors versions of CHEM-111/112 and CHEM-119/120 are taught in small lecture (25 max.) and laboratory (16 max.) section formats. Informal help sessions are available in all courses. Many of the major programs offered by the University of Delaware require one of these sequences. A listing is given at the end of this section. In the following, the courses are described in order of increasing difficulty. Only one course among CHEM-101, 103, 105, and 111 (or CHEM-102, 104, and 112) can count toward graduation requirements.  课程编号与名称   CHEM 100 Chemistry & Human Environment  CHEM 101 General Chemistry  CHEM 102 General Chemistry  CHEM 103 General Chemistry  CHEM 103 Honors: General Chemistry  CHEM 104 General Chemistry  CHEM 105 General Chemistry  CHEM 111 General Chemistry  CHEM 119 Quantitative Chemistry I  CHEM 120 Quantitative Chemistry II   **课程适用专业**   **Majors and Required Freshman Chemistry Courses**   |  |  | | --- | --- | | CHEM-101/102: | Animal Biotechnology, Animal Science, Apparel Design, Applied Animal Science, Applied Nutrition, Collections Care, Dietetics, Entomology, Environmental Soil Science, Fashion Merchandising, Food Science, Food Technology, Landscape Horticulture, Natural Resource Management, Plant Protection, Plant Science, Wildlife Conservation. | | CHEM-103/104: | Applied Electronics and Controls, Art Conservation, Athletic Training (103 only), Biological Sciences, Biological Sciences Education, Biotechnology, Cell & Molecular Biology and Genetics, Chemistry (BA), Chemistry Education, Civil Engineering (103 only), Computer Engineering (103 only), Construction Technology and Technical Management, Earth Sciences Education (103 only), Ecology and Organismic Biology, Electrical Engineering (103 only), Ecology and Organismic Biology, Electrical Engineering (103 only), Engineering Technology, Environmental Biotechnology, Environmental Engineering, Environmental Science, Exercise Physiology, Exercise Science, Geology, Materials Physics, Mechanical Engineering (103 only), Medical Technology, Nutritional Sciences, Paleobiology, Physics (103 only), Physics Education, Preveterinary Medicine. | | CHEM-105/106: | Nursing | | CHEM-111/112: | Biochemistry, Chemical Engineering, Chemistry (BS) | | CHEM-119/120: | Biochemistry, Chemical Engineering (119 only), Chemistry (BS) |   **CHEM-100 Chemistry and the Human Environment** A non-mathematical, non-laboratory course oriented toward students who are not required to take any chemistry courses in their curricula. CHEM-100 emphasizes how chemistry can be employed to help understand environmental phenomena and demonstrates relationships between chemistry and energy, food, toxic and solid waste, air and water pollution, drugs, and other student-generated topics.  无数学和实验要求，无化学课学分要求的学生。化学和能源、食物、毒物和废物、空气和水污染、药物及学生提出的问题。   **CHEM-101 and CHEM-102 General Chemistry** This two semester sequence is required by a variety of majors in the following Colleges: Agriculture and Natural Resources, Health Sciences, and Human Services, Education and Public Policy (see majors at the end of this brochure). It is also a natural science elective for a significant number of arts, humanities, and social science majors. Topics covered in CHEM-101 include: **stoichiometry, thermochemistry, atomic structure, periodicity, chemical bonding, states of matter, colligative properties, redox, concentration units, and acids/bases.** Those dealt with in CHEM-102 involve: **kinetics, equilibria, electrochemistry, descriptive inorganic chemistry, introduction to organic chemistry, and nuclear chemistry.** One year of high school chemistry is a recommended prerequisite; high school algebra or concurrent enrollment in MATH-010 or a higher mathematics course is strongly recommended for CHEM-101. CHEM-101 is a prerequisite for CHEM-102.  必修学生：农学和资源，健康科学，公共事业，教育学和国家政策  选修学生：艺术、人类学、社会科学  101课程内容：化学定量关系，热化学，原子结构，周期性，化学键，物质状态，依数性，氧化还原，浓度单位，酸碱  102课程内容：动力学，平衡，电化学，描述性无机化学，介绍有机化学，核化学。   **CHEM-105 General Chemistry** CHEM-105 is an introductory course which is designed exclusively (and required) for nursing majors. Although its level is comparable to that of CHEM- 101/102, it is functionally a more difficult course due to its vastly accelerated pace. Most of the topics covered in CHEM-101/102 are dealt with in CHEM-105 in one semester: nuclear chemistry, atomic structure, periodicity, chemical bonding, molecular structure, nomenclature, stoichiometry, states of matter, thermodynamics, acids and bases, concentration units, kinetics, equilibria, and electrochemistry.  One year of high school chemistry is recommended; high school algebra or concurrent registration in MATH-010 or a higher level mathematics course is required for CHEM-105  护理专业学生。课程内容与101，102相似，但进程快，一学期讲完。  **CHEM-106 Elementary Bioorganic Chemistry** CHEM-106 is also intended (and required) solely for nursing majors. It is a single semester survey of relevant elementary organic and biochemistry, with strong emphasis on the latter. CHEM-105 is a prerequisite for CHEM-106.   护理专业学生，基础有机与生化。   **CHEM-103 and CHEM-104 General Chemistry**  This two-semester sequence is designed (and required) for science and engineering majors (see list of majors at the end of this brochure). CHEM-103 **deals with stoichiometry, gases, liquids, solids, atomic and molecular structure, chemical reactions in solution, and properties of solutions.** CHEM-104 covers **thermodynamics, kinetics, equilibrium among gases, liquids and solids, equilibrium in solution, acids and bases, electrochemistry, and nuclear chemistry.** Descriptive chemistry of representative elements is interspersed throughout both courses. Topics touched on briefly in CHEM-104 include transition elements and types and nomenclature of organic compounds. One year of high school chemistry is a **strongly** recommended prerequisite, and MATH-114 or a higher level mathematics course is a required corequisite for CHEM-103. CHEM-103 is a prerequisite for CHEM-104.  理工科学生。   只学103：Athletic Training，Civil Engineering，Computer Engineering，Earth Sciences Education，Electrical Engineering，Mechanical Engineering，Physics  **CHEM-103 and CHEM-104 Honors: General Chemistry** The content of CHEM-103/104 **Honors is similar to CHEM-103/104**, but the format used in the Honors version is a combination of active, cooperative, and problem-based learning techniques supplemented by a framework of mini-lectures, rather than the traditional straight lecture. These courses are intended to allow students to take further chemistry courses if desired or needed. Prereq: one year of high school chemistry, **highly** recommended; concurrent registration in MATH-114 or a higher mathematics course required. CHEM-104H is open to all students with B or better average, overall, and in CHEM-103.   积极、合作、问题为中心的小讲座。   **CHEM-111 and CHEM-112 General Chemistry** This two-semester sequence is designed (and required) for B.S. chemistry, biochemistry, and chemical engineering majors. Topics covered in CHEM-111 include: states of matter, nomenclature, stoichiometry, concentration units, periodicity, redox reactions, atomic structure, chemical bonding , molecular structure, and valence bond and molecular orbital theories. Those dealt with in CHEM-112 include: descriptive inorganic chemistry, acids and bases, coordination chemistry, organic chemistry, nuclear chemistry, thermodynamics, equilibria, electrochemistry, and kinetics. One year of high school chemistry or one semester of college chemistry is a required prerequisite, MATH-115 or a higher level mathematics course is a corequisite. CHEM-111 is a prerequisite for CHEM-112.  化学、生化、化工专业。   **CHEM-111 and CHEM-112 Honors: General Chemistry** CHEM-111/112 honors have the same general course content as CHEM-111/112. CHEM-111H is recommended for students entering Delaware as freshmen in the Honors Program who plan to major in chemistry, biochemistry, or chemical engineering. A year of high school chemistry (B or better) is required. MATH-241 or higher should be taken concurrently. Elementary calculus is used in CHEM-112H. CHEM-112H is open to all students with B or better average, overall, and in CHEM-111. CHEM-111H and CHEM-112H are not required in any major. | |