

## Table of Curriculum (For undergraduate students admitted in 2015 or before)

| Course Type             | Course Code | Course NO.                           | Course Title   | Lecture:Lab.:Credit (Homework) | Semester       | Remark |
|-------------------------|-------------|--------------------------------------|--|--------------------------------|----------------|--------|
| Mandatory major courses | CH211       | 23.211                               | Physical Chemistry I   | 3:0:3(3)                       | Spring         |        |
|                         | CH213       | 23.213                               | Physical Chemistry II  | 3:0:3(3)                       | Fall           |        |
|                         | CH221       | 23.221                               | Organic Chemistry I  | 3:0:3(3)                       | Spring         |        |
|                         | CH223       | 23.223                               | Organic Chemistry II   | 3:0:3(3)                       | Fall           |        |
|                         | CH252       | 23.252                               | Chemistry Major Lab I  | 0:6:2(3)                       | Fall           |        |
|                         | CH263       | 23.263                               | Introduction to Analytical Chemistry                           | 3:0:3(3)                       | Spring         |        |
|                         | CH344       | 23.344                               | Inorganic Chemistry I  | 3:0:3(3)                       | Spring         |        |
|                         | CH352       | 23.352                               | Chemistry Major Lab II   | 0:6:2(3)                       | Spring         |        |
|                         | CH353       | 23.353                               | Chemistry Major Lab III  | 0:6:2(3)                       | Fall           |        |
| Elective major course   | CH315       | 23.315                               | Physical Chemistry III   | 3:0:3(3)                       | Spring         |        |
|                         | CH325       | 23.325                               | Biorganic Chemistry  | 3:0:3(3)                       | Spring         |        |
|                         | CH336       | 23.336                               | Physical Organic Chemistry                                     | 3:0:3(3)                       | Fall           |        |
|                         | CH345       | 23.345                               | Inorganic Chemistry II   | 3:0:3(3)                       | Fall           |        |
|                         | CH381       | 23.381                               | Biochemistry I   | 3:0:3(3)                       | Spring         |        |
|                         | CH382       | 23.382                               | Biochemistry II  | 3:0:3(3)                       | Fall           |        |
|                         | CH416       | 23.416                               | Introduction to Molecular Spectroscopy                         | 3:0:3(3)                       | Spring or Fall | ◎      |
|                         | CH417       | 23.417                               | Chemical Reaction Dynamics                                     | 3:0:3(3)                       | "              | ◎      |
|                         | CH418       | 23.418                               | Computational Chemistry  | 2:3:3(3)                       | "              | ◎      |
|                         | CH419       | 23.419                               | Introduction to Solid-State Chemistry                          | 3:0:3(3)                       | "              | ◎      |
|                         | CH437       | 23.437                               | Structure Determination and Comprehension of Organic Molecules | 3:0:3(3)                       | "              | ◎      |
|                         | CH438       | 23.438                               | Organic Reactions and Synthesis                                | 3:0:3(3)                       | "              | ◎      |
|                         | CH439       | 23.439                               | Introduction to Organometallic Chemistry                       | 3:0:3(3)                       | "              | ◎      |
|                         | CH444       | 23.444                               | Inorganic Reactions and Spectroscopy                           | 3:0:3(3)                       | "              | ◎      |
|                         | CH450       | 23.450                               | Chemical Writing and presentation                              | 3:0:3(3)                       | "              | ◎      |
|                         | CH451       | 23.451                               | Advanced Chemistry Lab.  | 0:6:2(3)                       | "              |        |
|                         | CH452       | 23.452                               | Introduction to Nanochemistry                                  | 3:0:3(3)                       | "              | ◎      |
|                         | CH453       | 23.453                               | AI Chemistry   | 3:0:3(3)                       | "              | ◎      |
| CH464                   | 23.464      | Electroanalytical Chemistry          | 3:0:3(3)   | "                              | ◎              |        |
| CH471                   | 23.471      | Introduction to Polymer Chemistry    | 3:0:3(3)   | "                              | ◎              |        |
| CH481                   | 23.481      | Introduction to Biomolecule analysis | 3:0:3(3)   | "                              | ◎              |        |
| CH484                   | 23.484      | Introduction to Chemical Biology     | 3:0:3(3)   | "                              | ◎              |        |
| CH485                   | 23.485      | Special Topics in Modern Chemistry I | 3:0:3(3)   | "                              |                |        |
| Research                | CH490       | 23.490                               | Undergraduate Research   | 0:6:3                          |                |        |
|                         | CH491       | 23.491                               | Laboratory Rotation Program                                    | 0:3:1                          | Spring or Fall |        |
|                         | CH492       | 23.492                               | Undergraduate Colloquium                                       | 1:0:1                          | Spring         |        |
|                         | CH495       | 23.495                               | Individual Study   | 0:6:1                          |                |        |

※ ◎: Course mutually recognized by undergraduate and graduate programs

※ Course classification, course title, and mutual recognition of credits may differ according to the effective year of the requirements.

# Table of Curriculum (For undergraduate students admitted in 2016 or after)

| Course Type             | Course Code | Course NO.                           | Course Title   | Lecture:Lab.:Credit (Homework) | Semester       | Remark |
|-------------------------|-------------|--------------------------------------|--|--------------------------------|----------------|--------|
| Mandatory major courses | CH211       | 23.211                               | Physical Chemistry I   | 3:0:3(3)                       | Spring         |        |
|                         | CH213       | 23.213                               | Physical Chemistry II  | 3:0:3(3)                       | Fall           |        |
|                         | CH221       | 23.221                               | Organic Chemistry I  | 3:0:3(3)                       | Spring         |        |
|                         | CH223       | 23.223                               | Organic Chemistry II   | 3:0:3(3)                       | Fall           |        |
|                         | CH252       | 23.252                               | Chemistry Major Lab I  | 0:6:2(3)                       | Fall           |        |
|                         | CH263       | 23.263                               | Introduction to Analytical Chemistry                           | 3:0:3(3)                       | Spring         |        |
|                         | CH344       | 23.344                               | Inorganic Chemistry I  | 3:0:3(3)                       | Spring         |        |
|                         | CH352       | 23.352                               | Chemistry Major Lab II   | 0:6:2(3)                       | Spring         |        |
|                         | CH353       | 23.353                               | Chemistry Major Lab III  | 0:6:2(3)                       | Fall           |        |
| Elective major course   | CH315       | 23.315                               | Physical Chemistry III   | 3:0:3(3)                       | Spring         |        |
|                         | CH325       | 23.325                               | Bioorganic Chemistry   | 3:0:3(3)                       | Spring         |        |
|                         | CH336       | 23.336                               | Physical Organic Chemistry                                     | 3:0:3(3)                       | Fall           |        |
|                         | CH382       | 23.382                               | Biochemistry II  | 3:0:3(3)                       | Fall           |        |
|                         | CH416       | 23.416                               | Introduction to Molecular Spectroscopy                         | 3:0:3(3)                       | Spring or Fall | ◎      |
|                         | CH417       | 23.417                               | Chemical Reaction Dynamics                                     | 3:0:3(3)                       | "              | ◎      |
|                         | CH418       | 23.418                               | Computational Chemistry  | 2:3:3(3)                       | "              | ◎      |
|                         | CH419       | 23.419                               | Introduction to Solid-State Chemistry                          | 3:0:3(3)                       | "              | ◎      |
|                         | CH437       | 23.437                               | Structure Determination and Comprehension of Organic Molecules | 3:0:3(3)                       | "              | ◎      |
|                         | CH438       | 23.438                               | Organic Reactions and Synthesis                                | 3:0:3(3)                       | "              | ◎      |
|                         | CH439       | 23.439                               | Introduction to Organometallic Chemistry                       | 3:0:3(3)                       | "              | ◎      |
|                         | CH444       | 23.444                               | Inorganic Reactions and Spectroscopy                           | 3:0:3(3)                       | "              | ◎      |
|                         | CH450       | 23.450                               | Chemical Writing and presentation                              | 3:0:3(3)                       | "              | ◎      |
|                         | CH451       | 23.451                               | Advanced Chemistry Lab.  | 0:6:2(3)                       | "              |        |
|                         | CH452       | 23.452                               | Introduction to Nanochemistry                                  | 3:0:3(3)                       | "              | ◎      |
|                         | CH453       | 23.453                               | AI Chemistry   | 3:0:3(3)                       | "              | ◎      |
|                         | CH464       | 23.464                               | Electroanalytical Chemistry                                    | 3:0:3(3)                       | "              | ◎      |
|                         | CH471       | 23.471                               | Introduction to Polymer Chemistry                              | 3:0:3(3)                       | "              | ◎      |
|                         | CH481       | 23.481                               | Introduction to Biomolecule analysis                           | 3:0:3(3)                       | "              | ◎      |
| CH484                   | 23.484      | Introduction to Chemical Biology     | 3:0:3(3)   | "                              | ◎              |        |
| CH485                   | 23.485      | Special Topics in Modern Chemistry I | 3:0:3(3)   | "                              |                |        |
| Advanced major          | CH345       | 23.345                               | Inorganic Chemistry II   | 3:0:3(3)                       | Fall           |        |
|                         | CH381       | 23.381                               | Biochemistry I   | 3:0:3(3)                       | Spring         |        |
| Research                | CH490       | 23.490                               | Undergraduate Research   | 0:6:3                          |                |        |
|                         | CH491       | 23.491                               | Laboratory Rotation Program                                    | 0:3:1                          | Spring or Fall |        |
|                         | CH492       | 23.492                               | Undergraduate Colloquium                                       | 1:0:1                          | Spring         |        |
|                         | CH495       | 23.495                               | Individual Study   | 0:6:1                          |                |        |

※ ◎: Course mutually recognized by undergraduate and graduate programs

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## Table of Curriculum (Graduate Program)

| Course Type | Course Code | Course NO. | Course Title                             | Lecture:Lab:Cred it (Homework) | Semester       | Remark |
|-------------|-------------|------------|--|--------------------------------|----------------|--------|
| Elective    | CH502       | 23.502     | Quantum Chemistry I                      | 3:0:3(3)                       | Spring or Fall | ◎      |
|             | CH503       | 23.503     | Statistical Thermodynamics I             | 3:0:3(3)                       | "              | ◎      |
|             | CH504       | 23.504     | Advanced Physical Chemistry              | 3:0:3(3)                       | "              |        |
|             | CH521       | 23.521     | Advanced Organic Chemistry               | 3:0:3(3)                       | "              |        |
|             | CH522       | 23.522     | Organic Synthesis I                      | 3:0:3(3)                       | "              | ◎      |
|             | CH523       | 23.523     | Organic Synthesis II                     | 3:0:3(3)                       | "              |        |
|             | CH524       | 23.524     | Contemporary Organic Chemistry           | 3:0:3(3)                       | "              | ◎      |
|             | CH541       | 23.541     | Advanced Inorganic Chemistry             | 3:0:3(3)                       | "              | ◎      |
|             | CH542       | 23.542     | Organometallic Chemistry                 | 3:0:3(3)                       | "              | ◎      |
|             | CH571       | 23.571     | Structural chemistry of soft matter      | 3:0:3(3)                       | "              | ◎      |
|             | CH581       | 23.581     | Advanced Biochemistry                    | 3:0:3(3)                       | "              |        |
|             | CH582       | 23.582     | Protein Chemistry                        | 3:0:3(3)                       | "              | ◎      |
|             | CH604       | 23.604     | Quantum Chemistry II                     | 3:0:3(3)                       | "              |        |
|             | CH605       | 23.605     | Statistical Thermodynamics II            | 3:0:3(3)                       | "              |        |
|             | CH606       | 23.606     | Chemical Reaction Dynamics               | 3:0:3(3)                       | "              |        |
|             | CH607       | 23.607     | Surface Chemistry                        | 3:0:3(3)                       | "              |        |
|             | CH609       | 23.609     | Electrochemistry                         | 3:0:3(3)                       | "              |        |
|             | CH610       | 23.610     | Structural Biochemistry                  | 3:0:3(3)                       | "              |        |
|             | CH626       | 23.626     | Natural Products                         | 3:0:3(3)                       | "              |        |
|             | CH627       | 23.627     | Heterocyclic Chemistry                   | 3:0:3(3)                       | "              |        |
|             | CH628       | 23.628     | Organometallic Reactions                 | 3:0:3(3)                       | "              |        |
|             | CH632       | 23.632     | Stereochemistry of Organic Chemistry     | 3:0:3(3)                       | "              |        |
|             | CH644       | 23.644     | Bioinorganic Chemistry                   | 3:0:3(3)                       | "              |        |
|             | CH645       | 23.645     | Catalysis Chemistry                      | 3:0:3(3)                       | "              |        |
|             | CH646       | 23.646     | Materials Chemistry                      | 3:0:3(3)                       | "              |        |
|             | CH661       | 23.661     | Electrocatalysis                         | 3:0:3(3)                       | "              |        |
|             | CH671       | 23.671     | Chemistry of Organic High Polymers       | 3:0:3(3)                       | "              |        |
|             | CH672       | 23.672     | Specialty Polymer Chemistry              | 3:0:3(3)                       | "              |        |
|             | CH673       | 23.673     | Polymer Physical Chemistry               | 3:0:3(3)                       | "              |        |
|             | CH674       | 23.674     | Organic Electronic Materials             | 3:0:3(3)                       | "              |        |
|             | CH675       | 23.675     | Introduction to Lithography              | 3:0:3(3)                       | "              |        |
|             | CH683       | 23.683     | Cell Biochemistry                        | 3:0:3(3)                       | "              |        |
|             | CH711       | 23.711     | Special Topics in Physical Chemistry I   | 3:0:3(3)                       | "              |        |
|             | CH712       | 23.712     | Special Topics in Physical Chemistry II  | 3:0:3(3)                       | "              |        |
|             | CH713       | 23.713     | Special Topics in Physical Chemistry III | 3:0:3(3)                       | "              |        |
|             | CH733       | 23.733     | Special Topics in Organic Chemistry I    | 3:0:3(3)                       | "              |        |
|             | CH734       | 23.734     | Special Topics in Organic Chemistry II   | 3:0:3(3)                       | "              |        |
|             | CH735       | 23.735     | Special Topics in Organic Chemistry III  | 3:0:3(3)                       | "              |        |
|             | CH746       | 23.746     | Special Topics in Inorganic Chemistry I  | 3:0:3(3)                       | "              |        |

| Course Type | Course Code | Course NO. | Course Title                              | Lecture:Lab:Cred<br>it<br>(Homework) | Semester | Remark |
|-------------|-------------|------------|---|--------------------------------------|----------|--------|
|             | CH747       | 23.747     | Special Topics in Inorganic Chemistry II  | 3:0:3(3)                             | "        |        |
|             | CH773       | 23.773     | Special Topics in Polymer Chemistry I     | 3:0:3(3)                             | "        |        |
|             | CH774       | 23.774     | Special Topics in Polymer Chemistry II    | 3:0:3(3)                             | "        |        |
|             | CH782       | 23.782     | Special Topics in Biochemistry I          | 3:0:3(3)                             | "        |        |
|             | CH783       | 23.783     | Special Topics in Biochemistry II         | 3:0:3(3)                             | "        |        |
|             | CH881       | 23.881     | Advanced Special Topic in Chemistry I     | 1:0:1(0)                             | Summer   |        |
|             | CH882       | 23.882     | Advanced Special Topic in Chemistry II    | 2:0:2(0)                             | Summer   |        |
| Research    | CH960       | 23.960     | Thesis / Dissertation Research (Master)   |                                      |          |        |
|             | CH966       | 23.966     | Seminar (Master)                          | 1:0:1                                |          |        |
|             | CH980       | 23.980     | Thesis / Dissertation Research (Doctoral) |                                      |          |        |
|             | CH986       | 23.986     | Seminar (Doctoral)                        | 1:0:1                                |          |        |
|             | CH990       | 23.990     | Chemistry Education Training              | 0:3:1                                |          |        |

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## Substitute Course List

| Substitute courses in the department |                           |  |                               |                                      |                        |
|--------------------------------------|---------------------------|--|-------------------------------|--------------------------------------|------------------------|
| Category                             | Courses Currently offered |  | Courses not currently offered |                                      |                        |
|                                      | Course No.                | Course Title                           | Course No.                    | Course Title                         | Remark                 |
| Under-graduate                       | CH344                     | Inorganic Chemistry I                  | CH241                         | Inorganic Chemistry I                | Change in Course Code  |
| Under-graduate                       | CH345                     | Inorganic Chemistry II                 | CH242                         | Inorganic Chemistry II               | Change in Course Code  |
| Under-graduate                       | CH444                     | Inorganic Reactions and Spectroscopy   | CH444                         | Inorganic Materials Chemistry        | Change in Course Title |
| Under-graduate                       | CH263                     | Introduction to Analytical Chemistry   | CH361                         | Introduction to Analytical Chemistry | Change in Course Code  |
| Under-graduate                       | CH263                     | Introduction to Analytical Chemistry   | CH261                         | Analytical Chemistry                 | Course Closed          |
| Under-graduate                       | CH263                     | Introduction to Analytical Chemistry   | CH463                         | Instrumental Analysis                | Course Closed          |
| Under-graduate                       | CH252                     | Chemistry Major Lab I                  | CH252                         | Chemistry Lab I                      | Change in Course Title |
| Under-graduate                       | CH252                     | Chemistry Major Lab I                  | CH351                         | Chemistry Lab II                     | Course Closed          |
| Under-graduate                       | CH352                     | Chemistry Major Lab II                 | CH251                         | Chemistry Lab I                      | Course Closed          |
| Under-graduate                       | CH352                     | Chemistry Major Lab II                 | CH352                         | Chemistry Lab II                     | Change in Course Title |
| Under-graduate                       | CH361                     | Introduction to Analytical Chemistry   | CH463                         | Instrumental Analysis                | Course Closed          |
| Under-graduate                       | CH382                     | Biochemistry II                        | CH482                         | Biochemistry II                      | Change in Course Code  |
| Under-graduate                       | CH241                     | Inorganic Chemistry I                  | CH341                         | Inorganic Chemistry I                | Change in Course Code  |
| Under-graduate                       | CH242                     | Inorganic Chemistry II                 | CH342                         | Inorganic Chemistry II               | Change in Course Code  |
| Under-graduate                       | CH416                     | Introduction to Molecular Spectroscopy | CH316                         | Molecular Spectroscopy               | Course Closed          |

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