

## Department of Chemistry, Biology and Environmental Science

### Common Subjects

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|---------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 4501000 | Introduction to Chemistry, Biology, and Environmental Scienc | Department Staff                                                                                        |
| 4501100 | Calculus 1                                                   | Ryo HANAKI                                                                                              |
| 4501200 | Introduction to Linear Algebra 1                             | Ryo HANAKI                                                                                              |
| 4501300 | Calculus 2                                                   | Ryo HANAKI                                                                                              |
| 4501400 | Introduction to Linear Algebra 2                             | Ryo HANAKI                                                                                              |
| 4501500 | Introduction to Classical Physics                            | Satoru HIRENZAKI                                                                                        |
| 4501600 | Introduction to Modern Physics                               | Hisaki HAYASHII                                                                                         |
| 4501700 | Physics Laboratory 1                                         | Kazuki YAMAMOTO<br>Kunikazu ISHII                                                                       |
| 4501800 | Introductory Chemistry Laboratory 1                          | Tomoaki TANASE<br>Takashi NAKAZAWA<br>Hiroshi FUJII<br>Yasutaka KATAOKA<br>Yuji MIKATA<br>Yasuhito OHTA |
| 4501900 | Introductory Chemistry Laboratory 2                          | Yasutaka KATAOKA<br>Hiroshi FUJII<br>Hiroshi TAKASHIMA<br>Bunsho KURE                                   |
| 4502000 | Introductory Chemistry Laboratory 3                          | Takayuki NAKAJIMA<br>Hiroshi TAKASHIMA<br>Yasuyuki URA<br>Yumiko KATAOKA                                |
| 4502100 | Basic Chemistry I                                            | Hiroshi TAKASHIMA                                                                                       |
| 4502200 | Basic Chemistry II                                           | Bunsho KURE                                                                                             |
| 4502300 | Basic Chemistry III                                          | Tomoaki TANASE                                                                                          |
| 4502400 | Basic Chemistry IV                                           | Yasutaka KATAOKA                                                                                        |
| 4502510 | Elementary Physics for Chemistry I                           | Tomoaki TANASE                                                                                          |
| 4502520 | Elementary Physics for Chemistry I                           | Tomoaki TANASE                                                                                          |
| 4502600 | Elementary Physics for Chemistry II                          | Kenichi KINUGAWA                                                                                        |
| 4502700 | Fundamentals of Chemistry I                                  | Atsushi KAJIWARA                                                                                        |
| 4502800 | Fundamentals of Chemistry II                                 | Hiroki HOTTA                                                                                            |
| 4502900 | Essential Cell Biology                                       | Satoshi Kagiwada<br>Ichiro NISHII                                                                       |
| 4503000 | Systematics and Biodiversity                                 | Keiji WADA<br>Atsushi SAKAI<br>Ichiro NISHII                                                            |
| 4503100 | Exercises on Biological and Environmental Sciences           | Yoichi YUSA<br>Terue HARUMOTO<br>Keiko YASUDA                                                           |
| 4503200 | Basic Exercises on Biological and Environmental Sciences IB  | Satoshi TAMOTSU<br>Yoichi YUSA<br>Atsushi SAKAI<br>Keiko YASUDA<br>Hiroaki SATO                         |
| 4503300 | Basic Exercises on Biological and Environmental Sciences IIB | Satoshi Kagiwada<br>Yoichi YUSA<br>Atsushi SAKAI<br>Hisao YOSHIKAWA<br>Kumi NARA                        |
| 4503400 | Experimental Course for Biological and Environmental Science | Satoshi TAMOTSU<br>Yoichi YUSA<br>Atsushi SAKAI<br>Keiko YASUDA<br>Hiroaki SATO                         |
| 4503500 | Experimental Course for Biological and Environmental Science | Satoshi Kagiwada<br>Yoichi YUSA<br>Atsushi SAKAI<br>Hisao YOSHIKAWA                                     |

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|                         |                                                              | Kumi NARA                                                                              |
| 4503600                 | Basic Biology 1                                              | Satoshi TAMOTSU<br>Atsushi SAKAI                                                       |
| 4503700                 | Basic Biology 2                                              | Satoshi Kagiwada<br>Shin-ichi IWAGUCHI                                                 |
| 4503900                 | Ecology                                                      | Keiji WADA                                                                             |
| 4504000                 | Ecology Experimental Course                                  | Yoichi YUSA<br>Keiji WADA<br>Hiroaki SATO                                              |
| 4504100                 | Environmental Biology Experimental Course                    | Satoshi TAMOTSU<br>Atsushi SAKAI<br>Kumi NARA                                          |
| 4504200                 | Forest Biology Experimental Course                           | Atsushi SAKAI<br>Shin-ichi IWAGUCHI<br>Kiyoshi MATSUI                                  |
| 4504300                 | Freshwater Biology Experimental Course                       | Hiroaki SATO<br>Satoshi KAGIWADA<br>Koji TOJO                                          |
| 4504400                 | Marine Biology Experimental Course                           | Satoshi TAMOTSU<br>Keiko YASUDA<br>Tadashi AKIYAMA                                     |
| 4504500                 | Elementary Programming for Environmental Science             | Fugo TAKASU                                                                            |
| 4504600                 | Exercise on Elementary Programming for Environmental Science | Fugo TAKASU<br>Mayumi SETO<br>Katsuyuki NOGUCHI                                        |
| 4504700                 | Biological and Environmental Statistics                      | Hiroaki SATO<br>Satoshi TAKAHASHI                                                      |
| 4504800                 | Mathematics for Chemistry, Biology and Environmental Science | Satoshi TAKAHASHI                                                                      |
| 4504900                 | Mathematics for Chemistry, Biology and Environmental Science | Satoshi TAKAHASHI                                                                      |
| 4505100                 | Environmental Science on Earth 2                             | Makoto KUJI                                                                            |
| 4505210                 | Experiments on Earth Sciences 1                              | Kanako MURAMATSU<br>Makoto KUJI<br>Katsuyuki NOGUCHI<br>Hiroyuki KONISHI<br>Itaru SANO |
| 4505220                 | Experiments on Earth Sciences 1                              | Kanako MURAMATSU<br>Makoto KUJI<br>Katsuyuki NOGUCHI<br>Hiroyuki KONISHI<br>Itaru SANO |
| 4505400                 | General Earth Science 1                                      | Satoshi SAKAI                                                                          |
| 4505600                 | Earth Chemistry in Life Zone                                 | Hiroaki SATO<br>Mayumi SETO                                                            |
| <b>Chemistry Course</b> |                                                              |                                                                                        |
| 4601000                 | General Physical Chemistry I                                 | Kenichi KINUGAWA                                                                       |
| 4601100                 | General Inorganic Chemistry I                                | Takayuki NAKAJIMA                                                                      |
| 4601200                 | General Organic Chemistry I                                  | Yuji MIKATA                                                                            |
| 4601300                 | General Physical Chemistry II                                | Yasuhito OHTA                                                                          |
| 4601400                 | General Inorganic Chemistry II                               | Hiroshi FUJII<br>Hiroshi TAKASHIMA                                                     |
| 4601500                 | General Organic Chemistry II                                 | Yasuyuki URA                                                                           |
| 4601600                 | Advanced Chemistry Laboratory 1                              | Tomoaki TANASE<br>Kenichi KINUGAWA<br>Takashi KAJIWARA<br>Takayuki NAKAJIMA            |
| 4601700                 | Advanced Chemistry Laboratory 2                              | Kaoru IWA<br>Takashi NAKAZAWA<br>Yuji MIKATA<br>Yasuyuki URA                           |
| 4601800                 | Advanced Chemistry Laboratory 3                              | Masayasu IIDA<br>Yasuhito OHTA<br>Takae TAKEUCHI                                       |

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|                                   |                                                              | Tomokazu YOSHIMURA                                                                                                                                 |
| 4602000                           | Career Seminar for Chemistry II                              | Masayasu IIDA<br>Takayuki NAKAJIMA<br>Hiroshi TAKASHIMA<br>Junko OHKANDA<br>Masayo IWAKI<br>Mariko NISHIZAWA                                       |
| 4602300                           | Instrumental Analysis 1                                      | Takae TAKEUCHI<br>Yumiko KATAOKA                                                                                                                   |
| 4602400                           | Instrumental Analysis 2                                      | Yuji MIKATA                                                                                                                                        |
| 4602600                           | Practical English for Chemistry I                            | Masayasu IIDA                                                                                                                                      |
| 4602700                           | Practical English for Chemistry II                           | Kaoru IWAI<br>Hiroshi FUJII                                                                                                                        |
| 4602800                           | Chemical Thermodynamics                                      | Tomokazu YOSHIMURA                                                                                                                                 |
| 4602900                           | Transition Metal Chemistry                                   | Takashi KAJIWARA                                                                                                                                   |
| 4603000                           | Statistical Mechanics for Chemistry                          | Kenichi KINUGAWA                                                                                                                                   |
| 4603100                           | Quantum Chemistry                                            | Yasuhito OHTA                                                                                                                                      |
| 4603200                           | Coordination Chemistry                                       | Tomoaki TANASE                                                                                                                                     |
| 4603300                           | Organic Chemistry on Aliphatic Compounds                     | Yasutaka KATAOKA                                                                                                                                   |
| 4603400                           | Organic Chemistry on Aromatic Compounds                      | Yasuyuki URA                                                                                                                                       |
| 4603500                           | Chemistry in Nara Women's University                         | Course Staff                                                                                                                                       |
| 4603600                           | Rates of chemical reactions                                  | Tomokazu YOSHIMURA                                                                                                                                 |
| 4603700                           | Practical Physical Chemistry                                 | Takae TAKEUCHI                                                                                                                                     |
| 4603800                           | Solid State Chemistry                                        | Takashi KAJIWARA                                                                                                                                   |
| 4603900                           | Inorganic Reaction Mechanisms                                | Hiroshi FUJII                                                                                                                                      |
| 4604000                           | Polymer Chemistry                                            | Kaoru IWAI                                                                                                                                         |
| 4604100                           | Organic Stereochemistry                                      | Yasutaka KATAOKA                                                                                                                                   |
| <b>Biological Sciences Course</b> |                                                              |                                                                                                                                                    |
| 4701000                           | Biochemistry                                                 | Satoshi Kagiwada                                                                                                                                   |
| 4701100                           | English in Biological Sciences                               | Hiroaki SATO<br>Terue HARUMOTO<br>Atsushi SAKAI                                                                                                    |
| 4701200                           | Plant Morphology and Systematics Experimental Course         | Shuichi SAKAGUCHI<br>Atsushi SAKAI<br>Shin-ichi IWAGUCHI<br>Ichiro NISHII                                                                          |
| 4701300                           | Animal Morphology and Systematics Experimental Course        | Keiji WADA<br>Terue HARUMOTO<br>Yoichi YUSA<br>Satoshi TAMOTSU<br>Hisao YOSHIKAWA<br>Keiko YASUDA<br>Hiroaki SATO<br>Mayumi SUGIURA<br>Yasuo FUKUI |
| 4701400                           | Basic Exercises on Biological and Environmental Sciences IA  | Satoshi TAMOTSU<br>Yoichi YUSA<br>Atsushi SAKAI<br>Keiko YASUDA<br>Hiroaki SATO                                                                    |
| 4701500                           | Basic Exercises on Biological and Environmental Sciences IIA | Satoshi Kagiwada<br>Yoichi YUSA<br>Atsushi SAKAI<br>Hisao YOSHIKAWA<br>Kumi NARA                                                                   |
| 4701600                           | Experimental Course for Biological and Environmental Science | Satoshi TAMOTSU<br>Yoichi YUSA<br>Atsushi SAKAI<br>Keiko YASUDA<br>Hiroaki SATO                                                                    |
| 4701700                           | Experimental Course for Biological and Environmental Science | Satoshi Kagiwada<br>Yoichi YUSA                                                                                                                    |

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|         |                                                        | Atsushi SAKAI<br>Hisao YOSHIKAWA<br>Kumi NARA                                                                                                         |
| 4701800 | Essential Genetics                                     | Kumi NARA<br>Terue HARUMOTO<br>Shin-ichi IWAGUCHI                                                                                                     |
| 4701900 | Genetics and Biochemistry Experimental Course          | Terue HARUMOTO<br>Kazuhiko SAEKI<br>Shin-ichi IWAGUCHI                                                                                                |
| 4702000 | Molecular and Cellular Engineering Experimental Course | Toshio WATANABE<br>Shuichi SAKAGUCHI<br>Hisao YOSHIKAWA                                                                                               |
| 4702100 | Molecular Biology Experimental Course                  | Kazuhiko SAEKI<br>Shin-ichi IWAGUCHI                                                                                                                  |
| 4702200 | Cell Biology Experimental Course                       | Satoshi Kagiwada<br>Toshio WATANABE<br>Terue HARUMOTO                                                                                                 |
| 4702300 | Morphology and Development Experimental Course         | Keiko YASUDA<br>Shuichi SAKAGUCHI                                                                                                                     |
| 4702400 | Molecular Genetics                                     | Kazuhiko SAEKI                                                                                                                                        |
| 4702500 | Molecular and Cellular Engineering                     | Terue HARUMOTO<br>Shin-ichi IWAGUCHI<br>Kumi NARA                                                                                                     |
| 4702600 | Evolutionary Biology                                   | Hiroaki SATO                                                                                                                                          |
| 4702700 | Special Course in Molecular and Cellular Biology 1     | Terue HARUMOTO<br>Kazuhiko SAEKI<br>Shin-ichi IWAGUCHI<br>Shuichi SAKAGUCHI<br>Satoshi Kagiwada<br>Hisao YOSHIKAWA<br>Ichiro NISHII<br>Mayumi SUGIURA |
| 4702900 | Special Course in Molecular and Cellular Biology 3     | Satoshi Kagiwada                                                                                                                                      |
| 4703000 | Special Course in Molecular and Cellular Biology 4     | Terue HARUMOTO                                                                                                                                        |
| 4703100 | Special Course in Molecular and Cellular Biology 5     | Hisao YOSHIKAWA                                                                                                                                       |
| 4703200 | Special Course in Molecular and Cellular Biology 6     | Shin-ichi IWAGUCHI                                                                                                                                    |
| 4703300 | Special Course in Molecular and Cellular Biology 7     | Ichiro NISHII                                                                                                                                         |
| 4703400 | Special Course in Molecular and Cellular Biology 8     | Shuichi SAKAGUCHI                                                                                                                                     |
| 4703500 | Special Course in Integrative and Population Biology 1 | Satoshi TAMOTSU<br>Masasuke ARAKI<br>Keiji WADA<br>Toshio WATANABE<br>Yoichi YUSA<br>Atsushi SAKAI<br>Keiko YASUDA<br>Hiroaki SATO<br>Kumi NARA       |
| 4703600 | Special Course in Integrative and Population Biology 2 | Yoichi YUSA                                                                                                                                           |
| 4703700 | Special Course in Integrative and Population Biology 3 | Keiko YASUDA                                                                                                                                          |
| 4703800 | Special Course in Integrative and Population Biology 4 | Atsushi SAKAI                                                                                                                                         |
| 4703900 | Special Course in Integrative and Population Biology 5 | Kumi NARA                                                                                                                                             |
| 4704000 | Special Course in Integrative and Population Biology 6 | Toshio WATANABE                                                                                                                                       |
| 4704100 | Plant Physiology                                       | Atsushi SAKAI<br>Kumi NARA                                                                                                                            |
| 4704200 | Plant Morphology                                       | Shuichi SAKAGUCHI                                                                                                                                     |
| 4704300 | Animal Morphology and Histology                        | Keiko YASUDA<br>Satoshi TAMOTSU                                                                                                                       |
| 4704400 | Neurophysiology                                        | Satoshi TAMOTSU                                                                                                                                       |
| 4704500 | Cell Biology                                           | Satoshi Kagiwada<br>Toshio WATANABE                                                                                                                   |
| 4704600 | Developmental Biology                                  | Keiko YASUDA<br>Toshio WATANABE                                                                                                                       |

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| 4704700                              | Biology of Homeostasis                                        | Keiko YASUDA<br>Hisao YOSHIKAWA                                                                                |
| 4704800                              | Microbiology                                                  | Shin-ichi IWAGUCHI                                                                                             |
| 4704900                              | Marine Biology Course 1                                       | Keiji WADA<br>Satoshi TAMOTSU<br>Takeaki HANYUDA<br>Hiroshi KAWAI                                              |
| 4705000                              | Marine Biology Course 2                                       | Yoichi YUSA<br>Ichiro NISHII<br>Tetsuro AJISAKA                                                                |
| 4705100                              | Open Course For Marine Biology                                | Course Staff                                                                                                   |
| 4705200                              | Practical Exercises on Biological and Environmental Sciences  | Keiji WADA<br>Kazuhiko SAEKI<br>Shuichi SAKAGUCHI<br>Hisao YOSHIKAWA<br>Shin-ichi IWAGUCHI<br>Satoshi Kagiwada |
| 4705300                              | Practical Exercises on Biological and Environmental Sciences  | Satoshi TAMOTSU<br>Toshio WATANABE<br>Atsushi SAKAI<br>Kumi NARA<br>Ichiro NISHII                              |
| 4705400                              | Advanced Experimental Course for Biological and Environmental | Atsushi SAKAI<br>Keiji WADA<br>Yoichi YUSA<br>Hiroaki SATO<br>Shin-ichi IWAGUCHI                               |
| 4705500                              | Advanced Experimental Course for Biological and Environmental | Atsushi SAKAI<br>Kazuhiko SAEKI<br>Toshio WATANABE<br>Terue HARUMOTO<br>Kumi NARA<br>Mayumi SUGIURA            |
| 4705600                              | Advanced Experimental Course for Biological and Environmental | Atsushi SAKAI<br>Satoshi TAMOTSU<br>Satoshi KAGIWADA<br>Keiko YASUDA<br>Hisao YOSHIKAWA                        |
| <b>Environmental Sciences Course</b> |                                                               |                                                                                                                |
| 4801000                              | Introduction to Environmental Science                         | Course Staff                                                                                                   |
| 4801100                              | Applied programming for environmental science                 | Makoto KUJI                                                                                                    |
| 4801200                              | Exercise on applied programming for environmental science     | Makoto KUJI                                                                                                    |
| 4801300                              | Numerical Computation                                         | Sachiko HAYASHIDA                                                                                              |
| 4801500                              | Analytical Chemistry for Environmental Sciences               | Takae TAKEUCHI                                                                                                 |
| 4801600                              | Environmental Biochemistry                                    | Takashi NAKAZAWA                                                                                               |
| 4801700                              | Green Chemistry                                               | Yuji MIKATA                                                                                                    |
| 4801800                              | Introduction to Atmospheric Chemistry                         | Sachiko HAYASHIDA                                                                                              |
| 4801900                              | Introduction to Environmental Risk Assessment                 | Mayumi SETO                                                                                                    |
| 4802000                              | Applied mathematics for population dynamics                   | Fugo TAKASU                                                                                                    |
| 4802100                              | Special Course in Biological and Environmental Sciences 1     | Yoichi YUSA<br>Keiji WADA<br>Kazuhiko SAEKI<br>Satoshi TAMOTSU<br>Atsushi SAKAI<br>Hiroaki SATO<br>Kumi NARA   |
| 4802200                              | Special Course in Biological and Environmental Sciences 2     | Satoshi TAMOTSU                                                                                                |
| 4802300                              | Special Course in Biological and Environmental Sciences 3     | Hiroaki SATO                                                                                                   |
| 4802400                              | Special Course in Biological and Environmental Sciences 4     | Keiji WADA                                                                                                     |
| 4802500                              | Special Course in Biological and Environmental Sciences 5     | Atsushi SAKAI                                                                                                  |
| 4802600                              | Special Course in Biological and Environmental Sciences 6     | Kazuhiko SAEKI                                                                                                 |
| 4802700                              | Conservation Biology                                          | Yoichi YUSA                                                                                                    |

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| 4802800 | Advanced programming for environmental science   | Kanako MURAMATSU<br>Satoshi TAKAHASHI                                                                                        |
| 4802900 | Mathematical Practice for Environmental Sciences | Katsuyuki NOGUCHI                                                                                                            |
| 4803000 | Computer Experiment for Environmental Science    | Sachiko HAYASHIDA<br>Fugo TAKASU<br>Kanako MURAMATSU<br>Satoshi TAKAHASHI<br>Makoto KUJI<br>Katsuyuki NOGUCHI<br>Mayumi SETO |
| 4803100 | Atmospheric Radiation for Environmental Sciences | Makoto KUJI                                                                                                                  |
| 4803200 | Terrestrial Remote Sensing                       | Kanako MURAMATSU                                                                                                             |
| 4803300 | Data Analysis for Atmospheric Science            | Katsuyuki NOGUCHI                                                                                                            |
| 4803400 | Mathematical Modelling                           | Satoshi TAKAHASHI<br>Fugo TAKASU                                                                                             |
| 4803500 | Mobile Programming with Java                     | Satoshi TAKAHASHI                                                                                                            |