CHEM 100 Chemical Science
4 cr. Undergraduate.
Introductory course in general inorganic chemistry designed for the student with little or no previous science training. 3 hrs lec, 1 hr dis.
Prerequisites: Math 105(C) or Math 108(C) or Math 116(C) or Level 30 on Math Placement Test.
Course Rules: Not open for cr to students who have cr in Chem 102.
General Education Requirements: NS
Current Offerings: http://uwm.edu/schedule

CHEM 101 Chemical Science
5 cr. Undergraduate.
Introductory chemistry with an emphasis on organic chemistry and selected aspects of general chemistry. 3 hrs lec, 2 hrs lab, 1 hr dis.
Prerequisites: a score of 1 on the chem placement test, & Level 30 on Math Placement Test or a satisfactory grade in any appropriate math course equal to or greater than UWM Math 105 or 108; or a grade of C or better in Chem 100(P).
Course Rules: Designed for students in nursing and related fields. Not open for cr to students who have cr in Chem 341 or 343; may not serve as prereq for Chem 341 or 343.
Current Offerings: http://uwm.edu/schedule

CHEM 102 General Chemistry
5 cr. Undergraduate.
Introductory college chemistry. Modern fundamental principles of chemistry, with emphasis on the chemistry of nonmetals. 3 hrs lec, 3 hrs lab, 1 hr dis.
Prerequisites: score of 1 on chem placement test, & Level 30 on Math Placement Test or a satisfactory grade in any appropriate math course equal to or greater than UWM Math 105 or 108; or min grade C in Chem 100(P).
Current Offerings: http://uwm.edu/schedule

CHEM 103 Survey of Biochemistry
5 cr. Undergraduate.
The nature of materials of biological systems. 3 hrs lec, 1 hr dis, 3 hrs lab.
Prerequisites: grade of C or better in Chem 101(P).
Course Rules: Designed for students in nursing and related fields. Not open for cr to chem majors; may not serve as a prereq for Chem 341 or 343.
Current Offerings: http://uwm.edu/schedule

CHEM 104 General Chemistry and Qualitative Analysis
5 cr. Undergraduate.
Continuation of Chem 102. 3 hrs lec, 3 hrs lab, 1 hr dis.
Prerequisites: grade C or better in Chem 102(P).
Current Offerings: http://uwm.edu/schedule

CHEM 105 General Chemistry for Engineering
5 cr. Undergraduate.
Modern principles of chemistry with emphasis on applications in engineering fields.
Prerequisites: score of 1 on chem placement test, Level 30 on Math Placement Test or a satisfactory grade in any appropriate math course equal to or greater than UWM Math 105 or 108; or in grade C in Chem 100(P).
Course Rules: Not open to those w/cr in Chem 104(ER). Not a prereq for Chem 221, 341, or 343.
Current Offerings: http://uwm.edu/schedule

CHEM 106 Chemistry in the World Around Us--Chemistry for the Non-Science Major
3 cr. Undergraduate.
An introduction to chemistry with an emphasis on outlining how chemistry affects our everyday lives. 3 hrs lec, 2 hrs lab/dis.
Prerequisites: none.
Course Rules: Intended for non-science majors and minors; does not carry cr toward chem or biochem majors or chem minor.
Current Offerings: http://uwm.edu/schedule

CHEM 108 Basic Chemistry for Teachers
3 cr. Undergraduate.
Chemical models, atoms, and molecules; properties of elements; useful chemical reactions; application to elementary education classrooms. 2 hrs lec; 2 hrs lab/dis.
Prerequisites: Math 176(P) or cons instr.
General Education Requirements: NS+ Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 194 First-Year Seminar
3 cr. Undergraduate.
The specific topics are announced in the Schedule of Classes each time the class is offered.
Prerequisites: none.
Course Rules: Open only to freshmen. Students may earn cr in just one L&S First-Year Sem (course numbers 192, 193, 194).
General Education Requirements: NS Last Taught: Fall 2016, Fall 2015, Fall 2002, Fall 2001.
Current Offerings: http://uwm.edu/schedule

CHEM 210 Introduction to Fermentation Chemistry
3 cr. Undergraduate.
Concepts of chemistry in the context of fermentation. The ideas of mass balance, equilibrium, rate and catalysis are applicable to fermentation.
Prerequisites: none.
Current Offerings: http://uwm.edu/schedule

CHEM 221 Elementary Quantitative Analysis
4 cr. Undergraduate.
Introduction to modern chemical analysis, including volumetric, gravimetric, electrochemical, and chromatographic methods. 2 hrs lec, 6 hrs lab.
Prerequisites: a grade of C or better in Chem 104(P).
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule
CHEM 281 Dead Men Do Tell Tales: An Introduction to Forensic Science
3 cr. Undergraduate.
A multidisciplinary view of how forensic scientists contribute to the many ways that physical evidence is collected, analyzed, and evaluated.
Prerequisites: none.
Course Rules: Jointly offered with & counts as repeat of Anthro/BMS/Crm Jst 281.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 285 Medicolegal Death Investigation
3 cr. Undergraduate.
Lectures on the fundamentals of death investigation as outlined by national guidelines for death investigators.
Prerequisites: none.
Course Rules: Jointly-offered with & counts as repeat of Anthro/BMS(C L Sci)/Crm Jst 285.
Last Taught: Fall 2015, Fall 2014, Fall 2013, Fall 2012.
Current Offerings: http://uwm.edu/schedule

CHEM 289 Internship in Chemistry, Lower Division
1-6 cr. Undergraduate.
Application of basic principles of chemistry in a business, organizational, educational, political, or other appropriate setting.
Prerequisites: intro course in chem; 2.25 gpa; cons supervising faculty member.
Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.
Current Offerings: http://uwm.edu/schedule

CHEM 297 Study Abroad:
1-12 cr. Undergraduate.
Designed to enroll students in UWM sponsored program before course work level, content and credits are determined and/or in specially prepared program course work.
Prerequisites: acceptance for Study Abroad Prog.
Course Rules: May be retaken w/chg in topic.
Current Offerings: http://uwm.edu/schedule

CHEM 299 Ad Hoc:
1-6 cr. Undergraduate.
Course created expressly for offering in a specified enrollment period. Requires only dept & assoc dean approval. In exceptional circumstances, can be offered in one add'l sem. May be retaken w/chg in topic.
Prerequisites: none; add'l prereqs may be assigned to specific topic.
Last Taught: Spring 2018, Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 311 Introduction to Inorganic Chemistry
3 cr. Undergraduate.
Inorganic chemistry, solid state chemistry, coordination chemistry, main-group chemistry.
Prerequisites: grade of C or better in Chem 104(P).
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 312 Inorganic Chemistry
2 cr. Undergraduate.
Transition metal chemistry.
Prerequisites: grade of C or better in Chem 104(P).
Last Taught: Spring 2018, Spring 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 313 Inorganic Chemistry
3 cr. Undergraduate.
Continuation of Chem 311.
Prerequisites: grade of C or better in Chem 104(P).
Course Rules: Not open for cr to students who have credit in Chem 312.
Last Taught: Spring 2018, Spring 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 316 Advanced Inorganic Chemistry
3 cr. Undergraduate.
Applications of group theory to the electronic structure of main group and transition metal compounds.
Prerequisites: grade of C or better in Chem 311(P).
Course Rules: Not open for cr to students who have credit in Chem 315.
Last Taught: Spring 2018, Spring 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 341 Introductory Survey of Organic Chemistry
3 cr. Undergraduate.
Intended for students who expect to take only one semester of organic chemistry.
Prerequisites: grade of C or better in Chem 104(P); conc reg in Chem 342(R).
Course Rules: Not open for cr to students who have credit in Chem 343.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 342 Introductory Organic Chemistry Laboratory
2 cr. Undergraduate.
6 hrs lab.
Prerequisites: a grade of C or better in Chem 104(P); conc reg in Chem 341.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 343 Organic Chemistry
3 cr. Undergraduate.
For students who intend to take more than one semester of organic chemistry.
Prerequisites: grade of C or better in Chem 104(P).
Course Rules: Not open for cr to students who have credit in Chem 341.
Current Offerings: http://uwm.edu/schedule

CHEM 344 Organic Chemistry Laboratory
2 cr. Undergraduate.
6 hr lab.
Prerequisites: grade C or better Chem 343(P); conc reg Chem 345(R).
Course Rules: Not open for cr to students who have credit in Chem 342.
Current Offerings: http://uwm.edu/schedule

CHEM 345 Organic Chemistry
3 cr. Undergraduate.
Continuation of Chem 343.
Prerequisites: grade of C or better in Chem 343(P); conc reg Chem 344(R).
Current Offerings: http://uwm.edu/schedule

CHEM 381 Honors Seminar:
3 cr. Undergraduate.
Discussion of aspects of the relationship of chemistry and society.
Prerequisites: soph st; Honors 200(P); cons Honors College dir; add'l prereq possible depending on specific topic.
Course Rules: May be retaken w/chg in topic to 9 cr max.
General Education Requirements: NS
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 399 Special Chemical Problems:
1-4 cr. Undergraduate.
Directed study or research on topics selected by the instructor.
Prerequisites: Chem 104(P); cons instr.
Course Rules: May be retaken to 7 cr max.
Current Offerings: http://uwm.edu/schedule
CHEM 481 Criminalistics
3 cr. Undergraduate.
Instruction on collection, preservation, and analysis of physical evidence from crime scenes. Instruction on the rules of evidence and expert testimony.
Prerequisites: jr st; admis to Forensic Sci cert prog; Anthro/Chem/C L Sci/Crm Jst 281(P); Crm Jst 480(P).
Course Rules: Anthro 481, Chem 481, BMS(C L Sci) 481, & Crm Jst 481 are jointly offered; they count as repeats of one another.
Current Offerings: http://uwm.edu/schedule

CHEM 489 Internship in Chemistry, Upper Division
1-6 cr. Undergraduate.
Application of advanced principles of chemistry in a business, organizational, educational, political, or other appropriate setting.
Prerequisites: jr st, 300-level or above course in Chem; 2.25 gpa; cons supervising faculty member.
Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.
Current Offerings: http://uwm.edu/schedule

CHEM 497 Study Abroad:
1-12 cr. Undergraduate/Graduate.
Designed to enroll students in UWM sponsored program before course work level, content and credits are determined and/or in specially prepared program course work.
Prerequisites: jr st; acceptance for Study Abroad Prog.
Course Rules: May be retaken w/chg in topic.
Current Offerings: http://uwm.edu/schedule

CHEM 499 Ad Hoc:
1-6 cr. Undergraduate.
Course created expressly for offering in a specified enrollment period. Requires only dept & assoc dean approval. In exceptional circumstances, can be offered in one add'l sem.
Prerequisites: jr st.
Course Rules: May be retaken w/chg in topic.
Current Offerings: http://uwm.edu/schedule

CHEM 501 Introduction to Biochemistry
3 cr. Undergraduate/Graduate.
The chemistry of biological systems.
Prerequisites: jr st; grade of C or better in Chem 341(P) or 345(P).
Course Rules: Does not count toward graduate degree in chemistry.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 502 Development of Modern Chemistry
2 cr. Undergraduate/Graduate.
Traces the development of chemistry from ancient to modern times.
Prerequisites: jr st, a grade of C or better in Chem 221(P) or 223(P), & Chem 341(P) or 343(P).
Current Offerings: http://uwm.edu/schedule

CHEM 511 Inorganic Chemistry
3 cr. Undergraduate/Graduate.
Introduction to theoretical principles and descriptive chemistry of the elements.
Prerequisites: jr st & grade of C or better in Chem 562(P); or grad st.
Course Rules: Does not count toward graduate degree in Chemistry.
Current Offerings: http://uwm.edu/schedule

CHEM 524 Instrumental Analysis
3 cr. Undergraduate/Graduate.
Chemical equilibria, separations, and theory and practice of instrumental measurements.
Prerequisites: jr st; grade of C or better in Chem 221(P) or 223(P).
Course Rules: Does not count toward a graduate degree in chemistry.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 537 Industrial Microbiology and Biochemistry Laboratory
2 cr. Undergraduate/Graduate.
Experiments using industrial fermentation approaches for isolation of biologically-relevant molecules, e.g., antibiotics; analysis of their function and activity using microbiological and biochemical techniques.
Course Rules: Bio Sci 537 & Chem 537 are jointly offered; they count as repeats of one another.
Last Taught: Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 541 Bioprocess Chemical Engineering
3 cr. Undergraduate.
Technical aspects of biotechnology and fermentation based on reactor design and function.
Prerequisites: jr st; grade of C or better in Chem 501(P).
Last Taught: Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 543 Bioproduct Regulatory Protocols Laboratory
3 cr. Undergraduate/Graduate.
Experiments in the production, purification, and characterization of biologically-relevant molecules, e.g., antibiotics; analysis of their function and activity using microbiological and biochemical techniques.
Current Offerings: http://uwm.edu/schedule

CHEM 547 Industrial Microbiology and Biochemistry Laboratory
2 cr. Undergraduate/Graduate.
Experiments in the production, purification, and characterization of biologically-relevant molecules, e.g., antibiotics; analysis of their function and activity using microbiological and biochemical techniques.
Course Rules: Bio Sci 547 & Chem 547 are jointly offered; they count as repeats of one another.
Last Taught: Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 551 Physical Chemistry I
3 cr. Undergraduate/Graduate.
Primary focus on chemical thermodynamics.
Prerequisites: jr st; grades of C or better in Chem 104(P), Physics 210(P) & 215(P), & Math 233(P). ElecEng 234(R) or Math 234(R).
Course Rules: Does not count toward a graduate degree in chemistry.
Current Offerings: http://uwm.edu/schedule
CHEM 562 Physical Chemistry II
3 cr. Undergraduate/Graduate.
Continuation of Chem 561; course content is largely kinetics, statistical mechanics, and quantum chemistry.
Prerequisites: jr st; grade of C or better in Chem 561(P).
Course Rules: Does not count toward a graduate degree in chemistry.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 563 Physical Chemistry Laboratory
1-2 cr. Undergraduate/Graduate.
Prerequisites: jr st & grade of C or better in Chem 221(P) or 223(P) & Chem 561(P).
Course Rules: Carries grad cr for students other than chem students.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 582 Advanced Chemistry Laboratory I
2 cr. Undergraduate.
Modern advanced chemical synthesis techniques.
Prerequisites: grade of C or better in Chem 344(P).
Current Offerings: http://uwm.edu/schedule

CHEM 584 Advanced Chemistry Laboratory II
2 cr. Undergraduate.
Advanced laboratory for analysis and characterization of chemical compounds.
Prerequisites: grade of C or better in Chem 344(P), 524(P), & 563(P).
Current Offerings: http://uwm.edu/schedule

CHEM 585 Internship in Forensic Toxicology
1-3 cr. Undergraduate.
Practical experience in a forensic toxicology laboratory under the supervision of a toxicologist.
Prerequisites: jr st, admis to Forensic Sci cert prog; Anthro/Chem/BMS(C L Sci)/Crm Jst 281(P) & 285(P); Chem 221(P) or 223(P); Crm Jst 480(P); Hepatitis B vaccine series or waiver.
Course Rules: Anthro 585, Chem 585, BMS(C L Sci) 585, & Crm Jst 585 are jointly offered; they count as repeats of one another.
Last Taught: Fall 2017, Fall 2016, Spring 2016, Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 594 Internship in Forensic Science
1-3 cr. Undergraduate.
On-site shadowing of evidence analyst at State Crime Laboratory.
Prerequisites: jr st; admis to Forensic Sci cert prog; Anthro/Chem/BMS(C L Sci)/Crm Jst 281(P); Chem 221(P) or 223(P); Crm Jst 480(P); Hepatitis B vaccine series or waiver.
Course Rules: Anthro 594, Chem 594, BMS(C L Sci) 594, & Crm Jst 594 are jointly offered; they count as repeats of one another.
Current Offerings: http://uwm.edu/schedule

CHEM 599 Special Projects in Chemistry
3-5 cr. Undergraduate/Graduate.
Directed study or research on subjects selected by the instructor. For further information consult dept chair.
Prerequisites: jr st; cons instr.
Course Rules: May be retaken to 7 cr max. Does not count toward a graduate degree in chemistry.
Last Taught: Fall 2017, Fall 2016, Spring 2016, Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 601 Biochemistry: Protein Structure and Function
3 cr. Undergraduate/Graduate.
Cellular synthesis of proteins, protein structure/function, enzyme mechanisms.
Prerequisites: jr st; grades of C or better in Chem 345(P), 501(P), & either 560(C) or 562(C).
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 602 Biochemistry: Cellular Processes
3 cr. Undergraduate/Graduate.
Biosynthesis and metabolism of nucleic acids, structure and replication of DNA, control of gene expression, signal transduction.
Prerequisites: jr st; grade of C or better in Chem 501(P) or cons instr.
Current Offerings: http://uwm.edu/schedule

CHEM 603 Introduction to Biochemistry Laboratory
2 cr. Undergraduate/Graduate.
Experiments in biological preparations, colorimetry, chromatography, and radioisotopetechniques.
Prerequisites: jr st; grades of C or better in Chem 221(P) or 223(P) & in Chem 501(P).
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 604 Biochemistry: Metabolism
3 cr. Undergraduate/Graduate.
Glycolysis, photosynthesis, biosynthesis, metabolism.
Prerequisites: jr st; grade of C or better in Chem 501(P) or cons instr.
Current Offerings: http://uwm.edu/schedule

CHEM 611 Physical Inorganic Chemistry
3 cr. Undergraduate/Graduate.
Physical and theoretical aspects of inorganic chemistry (spectroscopy, crystallography, kinetic and theoretical methods) are discussed.
Prerequisites: Chem 511(P) or cons instr.
Current Offerings: http://uwm.edu/schedule
CHEM 612 Transition Metal and Organometallic Chemistry
3 cr. Undergraduate/Graduate.
Advanced survey of elements, emphasizing transition elements and organometallic species. Main group organometallics and actinides and lanthanides briefly discussed.
Prerequisites: Chem 511(P) or cons instr.
Current Offerings: http://uwm.edu/schedule

CHEM 613 Main Group Chemistry
3 cr. Undergraduate/Graduate.
Advanced survey of metallic and non-metallic main group elements.
Prerequisites: jr st & grade of C or better in Chem 511(P) or grad st.
Current Offerings: http://uwm.edu/schedule

CHEM 614 Bio–Inorganic Chemistry
3 cr. Undergraduate/Graduate.
Inorganic chemistry for biological systems; metalloproteins; coordination chemistry in enzymes.
Prerequisites: jr st; grade of C or better in Chem 511(P).
Current Offerings: http://uwm.edu/schedule

CHEM 628 Nuclear and Radiochemistry
3 cr. Undergraduate/Graduate.
Survey of modern nuclear and radiochemistry; emphasis on the interactions of radiation with matter and application in radiation detection and measurement.
Prerequisites: jr st.; grades of B or better in Chem 524(P), 561(P), 562(P), & 563(P) or equiv; cons instr for undergrads.
Course Rules: Counts as repeat of Chem 489 with similar topic.
Current Offerings: http://uwm.edu/schedule

CHEM 630 Computational Chemistry
3 cr. Undergraduate/Graduate.
Computer modeling techniques for molecular systems.
Prerequisites: jr st; grade of C or better in Chem 562(P) or cons instr.
Last Taught: Fall 2014, Fall 2012, Fall 2010, Spring 2003.
Current Offerings: http://uwm.edu/schedule

CHEM 640 Advanced Survey of Organic Chemistry
3 cr. Undergraduate/Graduate.
Prerequisites: jr st; a grade of C or better in Chem 345(P).
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 647 Physical Methods of Organic Chemistry
3 cr. Undergraduate/Graduate.
Application of modern instrumental methods to the separation, analysis, and identification of organic compounds.
Prerequisites: jr st, a grade of C or better in Chem 345(P), 346(P), 524(P).
Last Taught: Spring 2015, Fall 2013, Fall 2011, Fall 2009.
Current Offerings: http://uwm.edu/schedule

CHEM 661 Intermediate Chemical Thermodynamics
3 cr. Undergraduate/Graduate.
Prerequisites: sr st, a grade of C or better in Chem 562(P).
Last Taught: Fall 2014, Fall 2013, Fall 2011, Fall 2010.
Current Offerings: http://uwm.edu/schedule

CHEM 662 Chemical Kinetics and Dynamics
3 cr. Undergraduate/Graduate.
Present understanding of reaction kinetics and dynamics. Topics range from experimental methods for kinetics measurements to microscopic theories of reaction rates.
Prerequisites: sr st; grade of C or better in Chem 562(P).
Last Taught: Fall 2017, Fall 2016, Fall 2014, Spring 2013.
Current Offerings: http://uwm.edu/schedule

CHEM 690 Scientist Career Transitions Seminar
1 cr. Undergraduate.
Preparation of science undergraduates for transition to science-related employment internships.
Prerequisites: soph st; Chem 344(C) & 345(C) or equiv; 3.000 GPA in science courses; cons instr.
Course Rules: Counts as repeat of Chem 489 with similar topic.
Current Offerings: http://uwm.edu/schedule

CHEM 691 Senior Research
1-4 cr. Undergraduate.
Introduction to chemical research. Independent and original study done under the direction of a staff member; communication of results. Recom for Chem majors.
Prerequisites: sr st; cons instr.
Course Rules: Chem 691 & 692 may be retaken to combined 6 cr max.
Current Offerings: http://uwm.edu/schedule

CHEM 692 Senior Thesis
2-6 cr. Undergraduate.
Introduction to chemical research. Independent and original study done under the direction of a staff member. Recom for chem majors.
Prerequisites: sr st; grade of C or better in English 102(P) or score at level 4 on EPT; cons instr.
Course Rules: Chem 691 & 692 may be retaken to combined 6 cr max.
Current Offerings: http://uwm.edu/schedule

CHEM 697 Senior Seminar
1 cr. Undergraduate.
Prerequisites: sr st.
Current Offerings: http://uwm.edu/schedule

CHEM 701 Topics in Biochemistry
2-4 cr. Graduate.
Selected topics in biochemistry. Two topics, each for 2 cr, will last 1/2 of the semester. Students may enroll in either (2 cr) or both (4 cr). The 3 cr option offers a more complete coverage of a single topic for a full semester.
Prerequisites: grad st; grade of C or better in Chem 501(P) or 601(P).
Course Rules: Retakable w/chg in topic to 9 cr max.
Last Taught: Spring 2018, Fall 2017, Spring 2016, Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 710 Advanced Survey of Inorganic Chemistry
3 cr. Graduate.
Graduate-level treatment of theoretical principles and descriptive chemistry of the elements.
Prerequisites: grad st.
Last Taught: Spring 2010, Fall 2008, Fall 2007, Fall 2006.
Current Offerings: http://uwm.edu/schedule
CHEM 711 Topics in Inorganic Chemistry: 3 cr. Graduate.
Selected topics of current research interest in inorganic chemistry are discussed in detail.
Prerequisites: grad st.
Course Rules: Retakable w/chg in topic to 9 cr max.
Last Taught: Fall 2015, Spring 2015, Fall 2013, Fall 2005.
Current Offerings: http://uwm.edu/schedule

CHEM 724 Medicinal Chemistry: Pharmacokinetics/Enzymes & Receptors as Drug Targets 3 cr. Graduate.
Principles of drug development; focus on protein drug targets.
Prerequisites: grad st.
Course Rules: Counts as repeat of Chem 741 w/ Medicinal Chemistry II subtitle.
Current Offerings: http://uwm.edu/schedule

CHEM 726 Topics in Analytical Chemistry: 3 cr. Graduate.
Selected topics which reflect current advances in analytical chemistry.
Prerequisites: grad st.
Course Rules: May be retaken with change in topic to max of 9 cr.
Current Offerings: http://uwm.edu/schedule

CHEM 728 Topics in Physical Chemistry: 3 cr. Graduate.
In-depth discussion of selected topics of current interest in modern physical chemistry.
Prerequisites: grad st.
Course Rules: Retakeable with change in topic to 9 cr max.
Last Taught: Spring 2017, Fall 2016, Fall 2008, Spring 1996.
Current Offerings: http://uwm.edu/schedule

CHEM 741 Medicinal Chemistry: Drug Discovery/Lead Optimization & DNA as Drug Targets 3 cr. Graduate.
Major principles of drug discovery; focus on nucleic acids as drug targets.
Prerequisites: grad st.
Course Rules: Counts as repeat of Chem 741 w/ Medicinal Chemistry I topic.
Last Taught: Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 742 Topics in Inorganic Chemistry: 3 cr. Graduate.
Survey of modern electrochemical theory and applications to measurement of solution concentrations, rate constants, thermodynamic quantities, transport properties, and adsorption phenomena.
Prerequisites: grad st; grade of C or better in Chem 524(P) or 621(P).
Current Offerings: http://uwm.edu/schedule

CHEM 744 Medicinal Chemistry: Pharmacokinetics/Enzymes & Receptors as Drug Targets 3 cr. Graduate.
Principles of drug development; focus on protein drug targets.
Prerequisites: grad st.
Course Rules: Counts as repeat of Chem 741 w/ Medicinal Chemistry II subtitle.
Current Offerings: http://uwm.edu/schedule

CHEM 746 Topics in Physical Chemistry: 3 cr. Graduate.
Fundamental principles of statistical mechanics, with applications to topics of physiochemical interest.
Prerequisites: grad st; a grade of C or better in Chem 661(P).
Current Offerings: http://uwm.edu/schedule

CHEM 747 Topics in Inorganic Chemistry: 3 cr. Graduate.
Basic postulates of quantum mechanics and consequences. Exact solutions for simple systems. Approximation methods for complex systems. Group theory and applications in organic, inorganic, and physical chemistry.
Prerequisites: grad st; a grade of C or better in Chem 562(P) & 640(P).
Last Taught: Spring 2017, Fall 2016, Fall 2008, Spring 1996.
Current Offerings: http://uwm.edu/schedule

CHEM 748 Physical Organic Chemistry 3 cr. Graduate.
Application of kinetics and other physical principles to the determination of reaction mechanisms.
Prerequisites: grad st; a grade of C or better in Chem 562(P) & 640(P).
Current Offerings: http://uwm.edu/schedule

CHEM 749 Topics in Organic Chemistry: 3 cr. Graduate.
Organic chemical processes-comprehensive emphasis on chemistry, polymers (preparation, properties, application), energy aspects, raw material supplies, impact on nation's and world's economics.
Prerequisites: grad st.
Course Rules: Recommended for minor in polymer chem.
Current Offerings: http://uwm.edu/schedule

Discussion of name reactions and other synthetic methods of preparative significance used in organic syntheses. Introduction and modification of functional groups. Recent examples of application from modern organic chemistry.
Prerequisites: grad st; a grade of C or better in Chem 345(P).
Current Offerings: http://uwm.edu/schedule

CHEM 751 Topics in Organic Chemistry: 2-3 cr. Graduate.
Current topics in organic chemistry, e.g., organometallic compounds, bioorganic chemistry, covalent interactions, reaction mechanisms, alkaloid total synthesis or photochemistry. Offered w/1 topic (3cr), w/2 (2cr ea); if two, take one or both.
Prerequisites: grad st; grade of C or better in Chem 345(P).
Course Rules: Retakable w/chg in topic to 9 cr max.
Current Offerings: http://uwm.edu/schedule

CHEM 752 Topics in Physical Chemistry: 3 cr. Graduate.
Current topics in physical chemistry.
Prerequisites: grad st.
Course Rules: May be retaken with change in topic up to 9 cr.
Last Taught: Spring 2017, Fall 2016, Fall 2008, Spring 1996.
Current Offerings: http://uwm.edu/schedule

CHEM 753 Medicinal Chemistry: Drug Discovery/Lead Optimization & DNA as Drug Targets 3 cr. Graduate.
Major principles of drug discovery; focus on nucleic acids as drug targets.
Prerequisites: grad st.
Course Rules: Counts as repeat of Chem 741 w/ Medicinal Chemistry I topic.
Last Taught: Fall 2015.
Current Offerings: http://uwm.edu/schedule

CHEM 754 Medicinal Chemistry: Pharmacokinetics/Enzymes & Receptors as Drug Targets 3 cr. Graduate.
Principles of drug development; focus on protein drug targets.
Prerequisites: grad st.
Course Rules: Counts as repeat of Chem 741 w/ Medicinal Chemistry II subtitle.
Current Offerings: http://uwm.edu/schedule

CHEM 755 Statistical Thermodynamics 3 cr. Graduate.
Current topics in statistical thermodynamics.
Prerequisites: grad st.
Course Rules: May be retaken with change in topic to 9 cr max.
Last Taught: Spring 2017, Fall 2016, Fall 2008, Spring 1996.
Current Offerings: http://uwm.edu/schedule

CHEM 756 Basic Quantum Chemistry 3 cr. Graduate.
Fundamental principles of quantum mechanics and consequences. Exact solutions for simple systems. Approximation methods for complex systems. Group theory and applications in organic, inorganic, and physical chemistry.
Prerequisites: grad st; a grade of C or better in Chem 562(P) & 640(P).
Last Taught: Spring 2017, Fall 2016, Fall 2008, Spring 1996.
Current Offerings: http://uwm.edu/schedule

CHEM 757 Topics in Inorganic Chemistry: 3 cr. Graduate.
Survey of modern electrochemical theory and applications to measurement of solution concentrations, rate constants, thermodynamic quantities, transport properties, and adsorption phenomena.
Prerequisites: grad st; grade of C or better in Chem 524(P) or 621(P).
Current Offerings: http://uwm.edu/schedule

CHEM 758 Topics in Physical Chemistry: 3 cr. Graduate.
In-depth discussion of selected topics of current interest in modern physical chemistry.
Prerequisites: grad st.
Course Rules: Retakeable with change in topic to 9 cr max.
Last Taught: Spring 2017, Fall 2016, Fall 2008, Spring 1996.
Current Offerings: http://uwm.edu/schedule

CHEM 759 Surface Chemistry II 3 cr. Graduate.
Advanced topics in surface chemistry.
Prerequisites: grad st; grade of C or better in Chem 661(P).
Current Offerings: http://uwm.edu/schedule

CHEM 760 Modern Industrial Organic Chemistry 3 cr. Graduate.
Organic chemical processes-comprehensive emphasis on chemistry, polymers (preparation, properties, application), energy aspects, raw material supplies, impact on nation's and world's economics.
Prerequisites: grad st.
Course Rules: Recommended for minor in polymer chem.
Current Offerings: http://uwm.edu/schedule
CHEM 781 Pulsed NMR Spectroscopy Theory and Practice
3 cr. Graduate.
Discussion and hands on practice of modern FT NMR approaches applied to analysis of chemical structure and dynamics in organic, inorganic, and biochemical molecules.
Prerequisites: grad st; cons instr.
Last Taught: Fall 2017, Fall 2016, Fall 2015, Fall 2014.
Current Offerings: http://uwm.edu/schedule

CHEM 782 Liquid Chromatography-Mass Spectrometry Fundamentals and Applications
3 cr. Graduate.
Discussion and hands on practice of modern mass spectrometry, with a focus on liquid chromatography/mass spectrometry (LC/MS) and LC/tandem MS (LC/MS/MS), as well as ICP-MS.
Prerequisites: grad st; cons instr.
Current Offerings: http://uwm.edu/schedule

CHEM 798 Scientific Glassblowing
1 cr. Graduate.
Techniques in design and maintenance of scientific glassware including low pressure systems together with consideration of the chemical structure and properties of common glasses.
Prerequisites: grad st.
Current Offerings: http://uwm.edu/schedule

CHEM 900 Chemistry Colloquium
0 cr. Graduate.
Weekly lectures on current research by members of the department and visiting scientists.
Prerequisites: grad st.
Course Rules: Fee assessed for 1 cr. Required of all Chem grad students.
Last Taught: Spring 2012, Fall 2011, Spring 2011, Fall 2010.
Current Offerings: http://uwm.edu/schedule

CHEM 912 Graduate Seminar
1 cr. Graduate.
Research problems in chemistry. Weekly papers and reports.
Prerequisites: grad st.
Course Rules: Required of all candidates for advanced degree.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 931 Advanced Seminar in Analytical Chemistry
1 cr. Graduate.
Weekly discussions and reports on recent developments and current progress in analytical chemistry. Topics will differ each semester, reflecting current work of particular interest.
Prerequisites: grad st & enroll in Chem 993(C).
Course Rules: Retakable to 9 cr max. No more than 9 cr may be accumulated in courses numbered 931-935.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 932 Advanced Seminar in Biochemistry
1 cr. Graduate.
Weekly discussions and reports on recent developments and current progress in biochemistry. Topics will differ each semester, reflecting current work of particular interest.
Prerequisites: grad st & enroll in Chem 996(C).
Course Rules: Retakable to 9 cr max. No more than 9 cr may be accumulated in courses numbered 931-935.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 933 Advanced Seminar in Inorganic Chemistry
1 cr. Graduate.
Weekly discussions and reports on recent developments and current progress in inorganic chemistry. Topics will differ each semester, reflecting current work of particular interest.
Prerequisites: grad st & enroll in Chem 994(C).
Course Rules: Retakable to 9 cr max. No more than 9 cr may be accumulated in courses numbered 931-935.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 934 Advanced Seminar in Organic Chemistry
1 cr. Graduate.
Weekly discussions and reports on recent developments and current progress in organic chemistry. Topics will differ each semester, reflecting current work of particular interest.
Prerequisites: grad st & enroll in Chem 990(C).
Course Rules: Retakable to 9 cr max. No more than 9 cr may be accumulated in courses numbered 931-935.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 935 Advanced Seminar in Physical Chemistry
1 cr. Graduate.
Weekly discussions and reports on recent developments and current progress in physical chemistry. Topics will differ each semester, reflecting current work of particular interest.
Prerequisites: grad st & enroll in Chem 992.
Course Rules: Retakable to 9 cr max. No more than 9 cr may be accumulated in courses numbered 931-935.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule

CHEM 990 Research: Organic
1-9 cr. Graduate.
Weekly discussions and reports on recent developments and current progress in chemical education. Topics will differ each semester, reflecting current work of particular interest.
Prerequisites: grad st.
Course Rules: Retakable.
Current Offerings: http://uwm.edu/schedule

CHEM 991 Research: Chemical Education
1-9 cr. Graduate.
Research in chemical education.
Prerequisites: grad st
Course Rules: Retakable.
Last Taught: Spring 2018, Fall 2017, Spring 2017, Fall 2016.
Current Offerings: http://uwm.edu/schedule
CHEM 992 Research: Physical
1-9 cr. Graduate.
Prerequisites: grad st.
Course Rules: Retakable.
Current Offerings: http://uwm.edu/schedule

CHEM 993 Research: Analytical
1-9 cr. Graduate.
Prerequisites: grad st.
Course Rules: Retakable.
Current Offerings: http://uwm.edu/schedule

CHEM 994 Research: Inorganic
1-9 cr. Graduate.
Prerequisites: grad st.
Course Rules: Retakable.
Current Offerings: http://uwm.edu/schedule

CHEM 996 Research: Biochemical
1-9 cr. Graduate.
Prerequisites: grad st.
Course Rules: Retakable.
Current Offerings: http://uwm.edu/schedule