<table>
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<tr>
<th>Department</th>
<th>Class Title</th>
<th>Class Description</th>
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<tr>
<td>Nutritional Sciences</td>
<td>311 Comparative Animal Nutrition</td>
<td>(Crosslisted with Dy Sci, An Sci) II; 3 cr (B-I). Nutrients and their source, assimilation, function and requirement. Prereqs: Biochem 201 or Bmolchem 314 or Chem 341 or Chem 343 or cons inst. <em>Students may choose between taking Nutri Sci 311 or 332; taking both courses is NOT required</em></td>
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<td>332 Human Nutritional Needs</td>
<td>I, II; 3 cr. Lectures, discussion. Biological basis of the nutritional requirements of humans and the influence of psychological and societal factors on the manner of their fulfillment. Prereqs: Chem 103; Chem 104 or Biochem 201 or Bmol Chem 314. <em>Students may choose between taking Nutri Sci 332 or 311; taking both courses is NOT required</em></td>
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<td>350 World Hunger and Malnutrition</td>
<td>(Crosslisted with Agronomy, Inter-AG, AAE) II; 3 cr (B-I). Hunger and poverty in developing countries and the United States. Topics include: nutrition and health, population, food production and availability, and income distribution and employment. <em>Students are not required to specifically take Nutri Sci 350. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 412, 514, Nutri Sci 540, 631, 672, 681, 682, 691, 692, or 699</em></td>
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<td>431 Nutrition in the Life Span</td>
<td>II; 3 cr. Influence of nutrition on growth and development; physiological basis of nutritional requirements throughout the life span, including the relationship of food habits and nutrition to selected chronic diseases; principles of nutritional intervention in community programs. Prereqs: Jr st;</td>
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Nutr Sci 332 & Physiol 335 or cons inst.

II; 2 cr (A). Capstone in the nutritional sciences, emphasis is on the integration of nutritional knowledge and the interpretation and application of nutrition-oriented research. Prereqs: Sr st & Nutr Sci 431; Nutr Sci 510 or con reg. *Nutri Sci 499 satisfies the 2 credit capstone requirement. Other options to satisfy this requirement are Nutri Sci {500 and 510} or {681 and 682} or {691 and 699} or 699

*500 Undergraduate Capstone Seminar Laboratory

I, II; 1 cr. Current topics in Nutritional Sciences and undergraduate research presentations. Enrollment limited to Nutritional Sciences majors. Prereqs: Nutr Sci 431 and Nutr Sci 510 (or con reg) and Sr st or second sem Jr st in Nutritional Sciences major or cons inst (Crosslisted with Biochem), I; 3 cr. Lectures in nutrition for students with a substantial background in biochemistry. Emphasis on biochemical and physiological fundamentals of nutrition. Discussion of protein, fat, carbohydrate, energy, minerals and vitamins and their roles and interrelationships in nutrition and metabolism. Prereqs: Biochem 501 or 602 or cons inst.

II; 1 cr (B-I). Students will increase their understanding of community-based nutrition needs, intervention programs and policy issues in the U.S. Written assignments will demonstrate students' positions on related issues. Prereqs: Nutr Sci 431 or cons inst. *Students are not required to specifically take Nutri Sci 540. They may alternatively choose to take one of the following courses; Food Sci 325,
410, 412, 514, Nutri Sci 350, 631, 672, 681, 682, 691, 692, or 699

I; 4 cr. Body systems in relation to the alterations in nutrition and metabolism that accompany disease states. Research related to therapeutic nutrition. Prereqs: Nutr Sci 332, 431; Biochem 501 or Biomolchem 314; or cons inst. Students are not required to specifically take Nutri Sci 631. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 412, 514, Nutri Sci 350, 540, 672, 681, 682, 691, 692, or 699 (Crosslisted with Phm Prac) II; 2-3 cr. Covers regulations and clinical science regarding the use of herbals, homeopathic remedies, and dietary supplements, focusing on peer-reviewed studies and integration with allopathic drugs; includes discussion of marketing issues. Prereqs: Phm Sci 432 or Biochem 501 or Bmolchem 314; Physiol 335; or cons inst. Students are not required to specifically take Nutri Sci 672. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 412, 514, Nutri Sci 350, 540, 631, 681, 682, 691, 692, or 699

I, II, SS; 2-4 cr (A). P: Honors candidacy. Students are not required to specifically take Nutri Sci 681. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 412, 514, Nutri Sci 350, 540, 631, 672, 682, 691, 692, or 699

I, II, SS; 2-4 cr. Continuation of 681. Prereqs: Nutr Sci 681 and honors candidacy. Students are not required to specifically take Nutri Sci 682. They may alternatively choose to take one of the following courses; Food Sci 325,
*691 Senior Thesis: Nutrition

I, II, SS; 1-4 cr (A). Prereqs: Sr st & cons inst. Students are not required to specifically take Nutri Sci 691. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 412, 514, Nutri Sci 350, 540, 631, 672, 681, 682, 692, or 699

*692 Senior Thesis

I, II, SS; 1-4 cr. Prereqs: Nutr Sci 691; Sr st & cons inst. Students are not required to specifically take Nutri Sci 692. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 412, 514, Nutri Sci 350, 540, 631, 672, 681, 682, 691, or 699

*699 Special Problems

*Taking these courses for 2 credits also satisfies the Capstone Requirement. Other courses that satisfy this requirement are Nutri Sci 499 and 521. NOTE: Nutri Sci 681 and 682 BOTH must be taken in order to satisfy the Capstone. The same applies for Nutri Sci 691 and 692 as well as 500 and 510

(Crosslisted with Bact 325 ) I; 3 cr. Principles of food preservation, fermentation, spoilage, sanitation, quality control, and food poisoning. Prereqs: Bact 101 or 301 or 303 or Med Micro 301 or cons inst. Students are not required to specifically take Food Sci 325. They may alternatively choose to take one of the following courses; Food Sci 410, 514, Nutri Sci

Food Science

325 Food Bacteriology
350, 540, 631, 672, 681, 682, 691, 692, or 699
II; 3 cr (B-I). Lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes, pigments and flavors.
Prereqs: Biochem 501 or equiv & Chem 221 or Food Sci 310. Students are not required to specifically take Food Sci 410. They may alternatively choose to take one of the following courses; Food Sci 325, 514, Nutri Sci 350, 540, 631, 672, 681, 682, 691, 692, or 699

II; 2 cr (B-I). Chemistry of vitamins, minerals, pigments, food additives, and potential toxicants, with emphasis on changes during processing and storage. Physiological characteristics of animal tissues postmortem and plant tissues postharvest. Prereqs: Biochem 501 & Food Sci 410, or cons inst.
Students are not required to specifically take Food Sci 514. They may alternatively choose to take one of the following courses; Food Sci 325, 410, 514, Nutri Sci 350, 540, 631, 672, 681, 682, 691, 692, or 699

I, II; 3 cr. Chemistry, nutrition, and metabolism of biological systems. Not accepted toward departmental M.S. or Ph.D. degree. Prereqs: Chem. 341 or 343.

*507 General Biochemistry I

I; 3-4 cr (P-A). Chemistry of biological materials, intermediary metabolism and protein structure. First semester of a year long first course in biochemistry. Prereqs: Chem 345. Honors stdts register for 4 cr, all others register for 3 cr.

*508 General Biochemistry II

II; 3-4 cr (P-A). Chemistry and metabolism of nucleic acids and protein synthesis. Molecular and cellular
biology. Prereqs: Biochem 507. Honors stdts register for 4 cr, all others register for 3 cr. *Students are required to take BOTH Biochem 507 and 508 unless taking Biochem 501 or Bmolchem 503

(Crosslisted with Biology) I; 3 cr (B-I). Focuses on history of life and the development of our ideas about evolution and natural selection; principles of genetics, including Mendel's laws and the structural and functional organization of chromosomes; interrelationships between individuals, populations, communities, ecosystems, and their environments. Prereqs: Math 221, Chem 104 or 109, prev or con reg in Chem 341 or 343; or cons inst.

(Crosslisted with Biology) I; 2 cr (b-B-I). Writing-intensive course with opportunities for students to make observations and generate and test their own ideas. Includes field trips to local marsh, prairie, and woodland communities and projects that deal with evolutionary relationships, interactions between organisms, adaptations, and genetics. Prereqs: Prev or con reg in Biocore 301.

(Crosslisted with Biology) II; 3 cr (B-I). Cellular and molecular basis of life. The main themes are the structure and function of cells and organelles, the flow of energy in cells, and the storage, expression, and regulation of genetic information. Prereqs: Biocore 301, Chem 341 or 343; or cons inst.

(Crosslisted with Biology) II; 2 cr (b-B-I). Writing-intensive course in which students undertake projects in areas such as enzyme catalysis, subcellular fractionation, motility, growth of
bacteriophage, genetic mapping, genetic analysis of a biochemical pathway, and transformation of bacterial cells with DNA. Prereqs: Prev or con reg in Biocore 303 or Biochem 501 & Genetics 466. So or Jr st or cons inst. *Taking a combination of Biocore 301, 302, 303, and 304 satisfies the Biological Science Requirement. Students may alternatively choose to {Zoology 151 and 152} or {Botony 130 and Zoology 101 and 102} to satisfy this requirement.

**(485) Organismal Biology**

Physiology course that considers how plants and animals interact with their environments to survive, obtain nutrients, exchange gases, and reproduce, also how the complex systems of neural and endocrine regulation in animals and hormonal and environmental regulation in plants allow cells and organs to communicate. Prereqs: Biocore 301 & 303; or cons inst.

**(486) Organismal Biology Laboratory**

Students learn plant and animal physiology by collaborating on experiments, in many cases using themselves as subjects (e.g., electrocardiograms, electroencephalograms, respiration rate). Emphasis is on critical thinking required in designing and conducting experiments and in analyzing and interpreting results. Prereqs: Biocore 323 or con reg.

**(587) Biological Interactions**

Biological systems do not operate in isolation but are characterized by interactions at all levels of organization. This capstone course helps students build on and integrate
the knowledge they have gained in the previous three semesters while addressing current research in topics such as signaling pathways and genetic disease. Prereqs: Biocore 301, 303, and 323; or cons inst. **Taking a combination of Biocore 323, 324, and 333 satisfies the Biological/Physical Science Requirement. Students may alternatively choose to take the following group of courses to satisfy this requirement: [Microbio 101 or 303] and [Microbio 102 or 304] and [Physiol 335] and [Genetics 466].**

**Biomolecular Chemistry 503 Human Biochemistry**

II; 3 cr (B-A). Lectures and conferences on basic principles of biological chemistry with emphasis on its application to the medical sciences. Prereqs: Chem 341 or 343 or cons inst. **Students may choose to take {Bmolchem 503} or {Biochem 501} or {Biochem 507 and 508} (Crosslisted with Biology) I, II; 5 cr (B-E).** Introduction to the basic principles and concepts of the biology of plants. an integrative approach stressing evolutionary sequences and the relationship between structure and function at succeeding levels of organization: molecule, cell, organism, population, community. Correlated lectures, laboratories, and discussions. Prereqs: Open to Fr; not open to stdts who have taken Botany 100 or Botany/Zoology 151-152. HS or coll chem crse recommended. **Students taking Botany 130 must also take Zoology 101 and 102 to satisfy the Biological Science Requirement. They may alternatively choose to take {Zoology 151 and 152} or {Biocore 301, 302, 303, and 304} to satisfy this requirement.**

**Biology/Botany 130 General Botany**

Student taking Botany 130 must also take Zoology 101 and 102 to satisfy the Biological Science Requirement. They may alternatively choose to take {Zoology 151 and 152} or {Biocore 301, 302, 303, and 304} to satisfy this requirement.
335 Physiology

I, II, SS; 5 cr. Lectures, recitations, demonstrations and labs. Prereqs: Biol or Zool & Gen Chem before enroll. Not open to Fr. Students must take Physiology 334, Genetics, 466, [Microbio 101 or 303], and [Microbio 102 or 304] to satisfy the Biological/Physical Science Requirement. They may alternatively choose to take Biocore 323, 324, and 333.

224 Introductory Statistics for Engineers

I, II; 3 cr (r-N-I). Prereqs: Math 221. 2nd Sem Fr St. Stdts may receive degree cr for no more than one of the following: Stat 201, 224, and 301. Alternatively, students may choose to take Math 210, 211, 221, 222, Stat 301, 371, 541, or 571.

301 Introduction to Statistical Methods

I, II, SS; 3 cr (r-N-I). Distributions, measures of central tendency, dispersion and shape, the normal distribution; experiments to compare means, standard errors, confidence intervals; effects of departure from assumption; method of least squares, regression, correlation, assumptions and limitations; basic ideas of experimental design. Prereqs: Open to Fr. Stdts may receive degree cr for no more than one of the following: Stat 201, 224, 301, 324, and 371. Alternatively, students may choose to take Math 210, 211, 221, 222, Stat 224, 371, 541, or 571.

371 Introductory Applied Statistics for the Life Sciences

I, II; 3 cr (r-N-I). The course will provide students in the life sciences with an introduction to modern statistical practice. Topics include: exploratory data analysis, probability and random variables; one-sample testing and confidence intervals, role of assumptions, sample size determination, two-sample inference;
basic ideas in experimental design, analysis of variance, linear regression, goodness-of-fit; biological applications. Prereqs: Math 112 & 113 or Math 114. Open to Fr. Stdts may receive cr for no more than one of the following crses: Stat 201, 224, 301, 324, & 371. Alternatively, students may choose to take Math 210, 211, 221, 222, Stat 224, 301, 541, or 571.

541 Introduction
 to Biostatistics

(Crosslisted with B M I) I; 3 cr (r-N-I). Course designed for the biomedical researcher. Topics include: descriptive statistics, hypothesis testing, estimation, confidence intervals, t-tests, chi-squared tests, analysis of variance, linear regression, correlation, nonparametric tests, survival analysis and odds ratio. Biomedical applications used for each topic. Prereqs: Math 221 or equiv or cons inst. Alternatively, students may choose to take Math 210, 211, 221, 222, Stat 224, 301, 371, or 571.

571 Statistical Methods for Bioscience I

(Crosslisted with Forest, Hort) I; 4 cr (r-I). Descriptive statistics, distributions, one- and two-sample normal inference, power, one-way Anova, simple linear regression, categorical data, non-parametric methods; underlying assumptions and diagnostic work. Prereqs: College algebra: Grad st or cons inst. Alternatively, students may choose to take Math 210, 211, 221, 222, Stat 224, 301, 371, or 541.

*101 Animal Biology

Biology

*101 Animal Biology

(B-E). General biological principles. Topics include: evolution, ecology, animal behavior, cell structure and function, genetics and molecular genetics and the physiology of a variety of organ systems emphasizing
function in humans. Prereqs: Open to Fr. Not for credit for those who have taken Zool 151 or 152 or equiv.

(Crosslisted with Biology) I, II, SS; 2 cr (B-E). Prereqs: Zool 101 or con reg. Open to Fr. *Students may take Zoology 101 and 102 in addition to Botony 130 to satisfy the Biological Science requirement. They may alternatively choose to take {Zoology 151 and 152} or {Biocore 301, 302, 303, and 304} to satisfy this requirement.

(Crosslisted with Botany, Biology) I, II; 5 cr (B-E). First semester of a two semester course designed for majors in biological sciences. Topics include: cell structure and function, cellular metabolism (enzymes, respiration, photosynthesis), information flow (DNA, RNA, protein), principles of genetics and a survey of the five major kingdoms of organisms. Prereqs: Open to Fr. HS chem or con reg in coll chem strongly advised. Not for full credit for those who have taken Bot 100, 130; Zool 101, 102, 120; or equiv.

(Crosslisted with Botany, Biology) I, II; 5 cr (b-B-E). Second semester of a two semester course designed for majors in biological sciences. Continuation of 151. Topics include: a survey of the five major kingdoms of organisms, selected topics in plant and animal physiology, the structure and dynamics of selected ecosystems, speciation and evolutionary theory. Prereqs: Botany/Zoology 151. Not for full credit for those who have taken Bot 100, 130; Zool 101, 102 **Students may take Zoology 151 and 152 to satisfy the Biological Science Requirement. They may alternatively choose to take
{Zoology 101, 102 and Botany 130} or
{Biocore 301, 302, 303, and 304 to satisfy this requirement}