College of Letters and Science

U. Wisconsin

1984

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The information, policies, and rules contained herein may be changed without notice. No part of this bulletin should be construed as a contract or offer to contract. The bulletin is intended only as an informational guide to the University of Wisconsin-Madison College of Letters and Science.

Students should bring this bulletin to registration. Additional copies may not be available at that time.

Bulk Mailing Code: 13
275 German Classics in Translation. Sem. 3 or (L.-I). P: So st or cons inst.
276 German Masterpieces in Translation. Sem. 3 or (L-E). Open to Fr.
277 Trends in Modern German Literature. Sem. 3 or (L-E). Reading and discussion of developments in modern German literature from Brecht, Hesse, Kafka, Mann to contemporary authors such as Grass, Durrenmatt, Grass, Weisse. Open to freshmen. Not open to students who have taken or are taking German 305 or above.
278 Yiddish Literature in Translation. Sem. 3 or (L-I). P: So st or cons inst.

Hebrew

280 Hebrew Literature (in translation)—Post-Biblical Period. II, 3 or (L-I). Secular Hebrew poetry and fiction from the medieval period through contemporary Israeli works. Great poets, novelists, and short story writers of the Hebrew language. All readings in English. P: So st.
383 Yiddish Fiction (in English). Sem. 3 or (L-I). Major writers, trends and themes in Yiddish fiction from pre-state period to present.

Italian
253 Dante’s Divine Comedy. I; 3 or (L-I). Rodini.
254 The Literature of Modern Italy: Existentialism, Fascism, Resistance II. 3 or (L-I). Aragono.
255 Boccaccio’s Decameron: the Human Comedy. I; 3 or (L-I). Rossi.
469 Special Topics in Italian Literature. Sem. 3 or (L-I). Treatment of special period, genre, theme, or movement in Italian literature. P: So st.

Scandinavian
273-274 Masterpieces of Scandinavian Literature. (Concurrent with Scand 378-379) Jr; 3 or (L-I). Open to Fr.
275 The Tales of Hans Christian Andersen. (Concurrent with Scand 378) Sem. 2-3 or (L-E). Open to Fr. Ingwersen.
338 The Drama of Henrik Ibsen. (Concurrent with Scand 422) Sem. 2-3 or (L-I). Naess.
339 The Drama of August Strindberg. (Concurrent with Scand 423) Sem. 2 or (L-I). Vowles.
373 Nineteenth Century Scandinavian Fiction. (Concurrent with Scand 373) Jr; 2 or (L-I). Vowles.
388 Knut Hamsun and Twentieth Century Norwegian Novels. (Concurrent with Scand 425) Sem. 2 or (L-I). Naess.
389 Kierkegaard to Lagerkvist—Ideas in Scandinavian Literature. (Concurrent with Scand 428) Sem. 2 or (L-I). Ingwersen.
340 Contemporary Scandinavian Literature. (Concurrent with Scand 427) Sem. 2 or (L-I). Vowles.
341 Twentieth Century Drama and Film. (Concurrent with Scand 428) Sem. 2 or (L-I). Vowles.
342 Mythology of Scandinavia. (Concurrent with Scand 429) Sem. 3 or (L-I). Flinterg, Ingwersen, Naess.
343 The Woman in Scandinavian Literature. (Concurrent with Scand 430) Sem. 3 or (L-I). Ingwersen.
344 Kalevala and Finnish Folklore. (Concurrent with Scand 444) Jr; 2 or 3 or (L-I). Nilsson.
345 The Scandinavian Tale and Ballad. (Concurrent with Scand 433) Jr; 2 or 3 or (L-I). Ingwersen.
346 The Icelandic Sagas. (Concurrent with Scand 453) Jr; 2 or 3 or (L-I). Naess.

Slavic
201 Survey of Nineteenth and Twentieth Century Russian Literature. I; 3 or (L-I). Pushkin to Tolstoy; reading and lecture in English. Open to Fr.
202 Survey of Nineteenth and Twentieth Century Russian Literature. II; 3 or (L-I). Dostoievsky to the present; reading and lecture in English. Open to Fr. Rosenfield.
203 The Woman in Russian Literature. Sem. 3 or (L-I). P: So st.
204 Chekhov. Sem. 3 or (L-I). P: So st. Rosenfield.
222 Dostoevsky, II; 3 or (L-I). Major works, lecture in English. P: So st. Rosenfield, Shaw.
258 Masterpieces of Russian Drama. I; 3 or (L-I). Main Russian dramatists and play from the end of the eighteenth century to the present. P: So st. Bailey, Pitrowicz.
229 Masterpieces of Polish Literature. Sem. 3 or (L-I). Their literary importance and social significance; lecture in English. P: So st. Pitrowicz.
415 Russian Folklore. Sem. 3 or (L-I). Main genres of Russian folklore, agricultural calendar, folk beliefs, and history of Russian folkloristics; works in English translation; lectures in English. P: Jr or st. and 8 cr literature. Bailey.

South Asian
272 Modern Indian Literature in Translation. Sem. 3 or (L-I). Critical and comparative study of literary works in Modern Indian Languages, with special emphasis on Bankim Chandra Chatterjee in Bengal, Prem Chand in Hindi, Ghalib in Urdu, and other significant writers whose works are available in English translation. Nilsen.
348 Literature of India: From Bhagavad Gita to Tagore. Sem. 3 or (L-I). An exploration of significant religious and secular writing in ancient and modern Indian languages, e.g., Sanskrit, Old Tamil, Bengali, Urdu, and Bengali, mainly in the genre of drama and poetry. Nilsson.
361 Persian and Urdu Literatures in Translation. Sem. 3 or (L-I). An introductory survey of Persian and Urdu literatures, shared within, and often in the heritage of, and influence of, Muslim influences (Iran, India, Pakistan). Emphasis on the interrelationship of these literatures, their common repertoire of literary conventions, themes, motifs, genres, and images, and readings in a few representative works of prose and poetry, essentially in translation. Offered once a year (preferably in the fall). Open to Fr. Memon.
377 Modern Indonesian Literature in Translation. Sem. 3 or (L-I). Selected representative novels, short stories, letters, and verse, almost all from the twentieth century. Collateral historical, critical, and biographical readings. Freshmen admitted only with cons inst. Rafferty.

Spanish
243 Cervantes’ Don Quixote. Sem. 3 or (L-I). Life and the works of Cervantes; historical developments in sixteenth and seventeenth century Spain related to literature; influence of Cervantes in foreign literature. P: Open to all undergraduates.
265 Spanish and Portuguese Masterpieces in Translation. Sem. 3 or (L-I). Major works of fiction, drama and poetry.
256 Miguel de Unamuno: Literature in Translation. I; 1 or (L-O). The life and philosophy of Unamuno and his significance in Hispanic literature. Emphasis on his theory of novel through a close study of three key texts. Texts and papers in English.
266 Latin-American Literature in Translation. Sem. 3 or (L-I). Major works of fiction, drama, and poetry.
267 Jorge Luis Borges: Literature in Translation. I; 1 or (L-I). The life of Borges and development of his major philosophical and aesthetic ideas studied through key texts. Texts and papers in English.

MATHEMATICS
213 Van Vleck Hall, 263-3053
Professors Ahern, Askey, Barwise, Bauman, Beek, Benkert, Bioknell, Bleicher, Box, Brauer, Bruck, Buck, Cannon, Chaver, Conley, Conner, Crandall, Crowe, deBoor, Dickey, Fadell, Forelli, Griffee, Gunji, Hall, Harvey, Hellerstein, Husselini, Isaacs, A. Johnson, M. Johnson, Keilser, Kuelsb, Kunen, Kurtz, Levin, Levy, Mcmillan, Meyer, Miles, Moore, Nagel, Noy, Nobie, Noheil, Orlik, Osbom, Parter, Plassman, Rabinowitz, Rall, Rider, Robbins, Rothschild, M. Rudin, W. Rudin, Russell, Schneider, Shea, Shen, Smith, Solomon, Turner, Uhlbrock, Voichkill, Wainger; Associate Professor Mil-
algebraic fractions; setting up and solving linear equations and inequalities; from geometry: axioms, theorems, and proofs of theorems concerning straight lines, triangles, and circles; graphing of linear equations and the solutions and geometric significance of systems of two linear equations; mensuration (area and volume) formulas for common two- and three-dimensional figures.

2. Intermediate mathematical competence: The topics of level 1, together with: setting up and solving quadratic equations and inequalities, complex numbers, rational exponents, progressions, graphing of linear equations and quadratics, properties of logarithms, geometric progression, mathematical induction and the binomial theorem.

3. a. Advanced mathematical competence: Algebra. The topics of Levels 1 and 2, together with: algebra of polynomial and rational functions; the function concept; theory of polynomial equations, including the remainder and factor theorems; solution of simultaneous linear equations; equations and graphs of circles; infinite geometric progression; mathematical induction and the binomial theorem.

3. b. Advanced mathematical competence: Trigonometry. The topics of Levels 1 and 2, together with: the function concept; trigonometric functions of a right angle number together with their basic properties and graphs; trigonometric equations and identities; geometric significance of the trigonometric functions and elementary applications; trigonometric form of complex numbers and DeMoivre’s Theorem.

4. Superior mathematical competence. Some high schools may find it possible to offer topics to specially selected students who have already achieved advanced mathematical competence. For example, courses in probability and statistics, analytic geometry, number theory, calculus, or topics in modern algebra are suitable for high school students of superior ability.

Advanced Placement Credit. A student who has completed a substantial calculus course in high school may earn university degree credit for Math 221 or 222 by the following: (1) the College Board calculus advanced placement exam; (2) the Math Department calculus advanced placement exam; or (3) advanced placement tests given in conjunction with calculus courses at certain Wisconsin high schools.

Placement
Each entering student (freshman or transfer student without previous college mathematics) who intends to take any mathematics course in the University is required to take the placement examinations in mathematics before registration. Placement in a course is not guaranteed on the basis of the high school record alone; placement in the course appropriate to the student’s needs and competence will be made by the Department of Mathematics on the basis of both high school record and placement scores.

Expected Levels and Courses. A student with only one unit of algebra and one unit of geometry in high school would normally achieve minimal competence and be placed in Math 101. A student with three years of high school mathematics would normally achieve intermediate competence and be placed in Math 112 or 114. A student with four years of high school mathematics would normally achieve advanced competence and be placed in Math 211 or 221.

Departmental Policy Regarding a D Grade. A student should repeat a Math course in which a grade of D is earned and which serves as a prerequisite to another course to be elected. A D grade commonly signifies some achievement but usually denotes a weak foundation upon which to build subsequent course work.

Audit
Normally students are not permitted to audit elementary and intermediate level math courses. Students are permitted to audit advanced math courses.

Major
A detailed description of the mathematics major program is in the Guidebook for Undergraduate Math Majors available in Van Vleck Hall.

Acceptance. To be accepted as a major in mathematics a student must complete Math 221, 222, and 223 (or equivalent sequences) with a grade-point average of 2.5 or better in this sequence. However, a somewhat higher grade-point average is advisable. Soon after completing Math 223 math majors should have their math advisers complete the Major Declaration Form and, perhaps later, but by the beginning of the senior year, the Math Major Approval Form. The former indicates acceptance into the major and the latter specifies which major requirements the student will satisfy. Majors are assigned math advisers through the Advising Secretary in 307 Van Vleck Hall.

Major Requirements: Non-Honors
The student chooses one of two options. Since both options allow considerable flexibility, students should plan their programs with the advice of their math advisers. Indeed, those following Option II must have their programs formally approved by their mathematics advisers. While Option II emphasizes the applications of mathematics, those following Option I are also encouraged to take courses in other departments which involve the application of mathematics.

Option I: Six mathematics courses numbered above 306, excluding 490. These six courses must include (1) 320 or 340, and (2) three courses numbered above 500 including at least two of the following: 521, 541, 551.

It is recommended that students select at least one course from a minimum of two of the following groups:

a) 461, 552, 561, 565
b) 321, 522, 623, 629
c) 319, 322, 419
d) 309, 310, 431, 632
e) 443, 542, 567
f) 571
g) 475
h) 513, 514, 525

Recommendations: Students preparing for graduate work in mathematics should satisfy a, b, and c below.

a) 340, 521, 522, 541, 542
b) 551 or 561
c) At least one course from a minimum of two of the following groups:
   i) 523, 629
   ii) 570
   iii) 322, 419
   iv) 309, 310, 431, 632
   v) 567
   vi) 475
   vii) 513, 514, 525

Students who plan to enter a mathematics Ph.D. program should acquire a reading knowledge of two foreign languages as early as possible. For mathematics the important languages are French, German, Russian and, possibly, Italian.

Option II: (for students interested in a particular area of application)

a) Four courses in some area of application of mathematics, including at least three courses at the intermediate or advanced level, selected with the approval of the student’s mathematics adviser. Note: Because of the L & S 80 credit rule if too many of the credits used to satisfy this requirement are from courses in the Mathematics Department or cross-listed with the Mathematics Department, the student will need more than 120 credits to graduate.

AND

b) Six mathematics courses numbered above 306, excluding 490, selected with the approval of the student’s mathematics adviser, including 320 or 340 and two courses numbered above 500.

No courses may be used to fulfill both a) and b).

Approval of a program under Option II will be required before a significant part of the program is completed and changes in the approved program will require prior consent of the mathematics adviser. The program is formally approved on the Math Major Approval Form, a copy of which is sent to the Degree Summary Office.

Sample programs for Option II are in the Guidebook for Undergraduate Math Majors. The areas of application in these sample programs include: computer sciences, chemistry, physics, statistics, actuarial mathematics, meteorology, ecology, genetics, forestry, business, and engineering.

In some cases the courses suggested in the sample program are close to satisfying the major requirements in the area of application.

Major Requirements: Honors
To earn the B.A. or B.S. with Honors in mathematics a student must complete (a) the L & S general course degree requirements, (b) the Honors Program requirements, and (c) the mathematics honors curriculum.

Mathematics Honors Curriculum. Honors majors must successfully complete with grades of B or better Math 340H (or 340 credit by examination), 521H, 522H, 541H, 542H, or their equivalents, together with 551 or 4 credits of 490. They must also complete with grades of B or better six credits of Math 581-682 (Senior Honors Thesis) or the following: one credit of Math 490 and six
Honors Courses

It is expected that there will be honors sections of Math 222 and 223 every semester and honors sections in Math 221 every first semester. Honors sections in advanced mathematics courses will be offered in the following rotation: Sem I: 340H, 521H, 541H; Sem II: 340H, 522H, 542H. Math 681 and 682 are taken for honors credit. In addition, students may enroll for honors credit in 480, 551, 552, 523, 529, and 632 (listed as "Honors section" for Honors in the Timetable). Other 400, 500, and 600 level mathematics courses may occasionally be listed as "Honors credit available" in the Timetable. A graduate course will carry honors credit.

Admission to Honors Courses.
In order to be admitted to an honors section or enroll for honors credit a student must have a 3.5 average in previous mathematics courses numbered 221 and above. A student is not required to be in the Honors Program nor an honors major in order to enroll in an honors section except for Math 681 and 682 which are limited to students in the Honors Program.

William Lowell Putnam Competition. This is an annual international mathematics competition for undergraduates, based on originality and cleverness rather than sophisticated mathematical knowledge. Students interested in preparation for this examination may enroll for credit in Math 490 Undergraduate Seminar in mathematics. The seminar will meet on Wednesdays at 7:00 pm in the Mathematics department. Students may attend informally. The instructor selects a team to represent UW-Madison, and others may be entered as individuals by the instructor.

Elementary Courses

099 Algebra. I, II; 2 cr. (E). Review of fractions and signed numbers and some Math 101 material. P: Minimum mathematical competence (one unit each of high school algebra and geometry) and suitable placement scores. For students with mastery of fundamental arithmetic skills, but without the competence in algebra necessary for Math 101. Math 99 and 100 together amount to one unit for the L & S mathematics requirement. Students may not receive credit for both 99 and 101.


101 Intermediate Algebra. I, II; 4 cr. (E). Polynomial products and factoring, algebraic fractions, linear and fractional equations and inequalities, systems of linear equations, ratios, and real exponential and logarithmic functions, parabolas. P: Minimum mathematical competence (one unit each of high school algebra and geometry) and satisfactory placement scores. Students may not receive credit for both 100 and 101 or for both 101 and 112. Algebra, I, II; 3 or 5 (E). Polynomial equations, remainder and factor theorems, functions, graphs of functions, simultaneous equations, theoretical functions, sequences and series, mathematical induction, bionomial theorem. P: Intermediate mathematical competence (three units of high school mathematics and satisfactory placement scores, or Math 99-100 or 101. Students may not receive credit for both 112 and 114.

113 Trigonometry. I, II; 2 or 3 (E). Graphs, properties, and graphs of trigonometric functions, identities, applications, trigonometric form of complex numbers, DeMoivre's theorem. P: Advanced mathematical competence-algebra and satisfactory placement scores, or Math 99-100 and 112. Students may not receive credit for both 113 and 114.

114 Algebra and Trigonometry. I, II; 5 or 6 (E). Covers Math 112 and 113. P: Intermediate mathematical competence (usually three years of high school mathematics) and satisfactory placement scores, or Math 99-100 and 101. Not recommended for a student with less than an AB in 100 or 101. Students may not receive credit for both 112 and 114, nor for both 113 and 114.

Courses 120, 121, 122, and 123 are designed for future teachers, and are open only to students in elementary education. In addition, the School of Family Resources and Consumer Sciences, and the classifications PBH, PSE, and PRS. They may not be used for satisfaction of degree requirements in the College of Letters and Science.

120 Theory of Arithmetic. I, II; 2 cr. The mathematical systems: systems associated with the arithmetic of integers, rational numbers, real numbers and decimals. Irrationalities and algorithms. Emphasis on a conceptual understanding useful for teaching in the elementary classroom. P: One unit each of algebra and geometry. Does not count for L & S credit.

121 Introductory Number Theory. Sem I: 1 cr. Properties of numbers such as divisibility tests, congruences, and fermat's little theorem. (E). P: One unit of algebra and geometry. Does not count for L & S credit.


123 Intuitive Algebra and Geometry. Sem I; 1 cr. A collection of interesting geometrical and topological ideas: modular functions, complex numbers, quaternions, regular polyhedra, symmetries of geometrical figures. Normally offered during the last five weeks of the semester. P: One unit each of algebra and geometry. Does not count for L & S credit.

Intermediate and Advanced Courses

Calculus Sequences. The Math 221-222 sequence is the first two semesters of the standard three semester calculus sequence, 221-222-223, normally required for all higher level math courses, and should be taken by those preparing for major study in mathematics, the physical sciences, computer sciences, or engineering. It is also recommended for students in the social and life sciences who may want a more substantial introduction to calculus than offered in Math 211-212. The Math 211-212 sequence does not prepare the student for any higher level mathematics courses and does not provide adequate math background for some courses in related fields. It is primarily for pre-business students who will not take more mathematics. Transferring from the 211-212 sequence to the 221-222 sequence is usually quite awkward. Transfer students and graduate students with three semesters of calculus which did not include an introduction to differential equations should consider Math 305 which provides the differential equations part of Math 223.

211 Calculus and Related Topics. I, II; 5 or 6 (E). Essential concepts of differential and integral calculus. Substitution for prebusiness students. Students preparing for further study in any branch of applied mathematics should take the Math 221-222 sequence rather than 211-212. P: (A) Advanced mathematical competence-algebra and satisfactory placement scores or Math 112, (B) Advanced mathematical competence-trigonometry and satisfactory placement scores or Math 112 or 211. Intermediate algebra and satisfactory placement scores or Math 112 or 114.

212 Calculus and Related Topics. I, II; 5 or 6 (E). Differential equations, infinite series, math of finance, matrices, linear programming. P: (A) Advanced mathematical competence-trigonometry and satisfactory placement scores or Math 112 or 211. (B) Advanced mathematical competence-trigonometry and satisfactory placement scores or Math 112 or 114.

221 Calculus and Analytic Geometry. I, II; 5 or 6 (E). Introduction to differential and integral calculus and plane analytic geometry; applications; transcendental functions. P: (A) Advanced mathematical competence-trigonometry and satisfactory placement scores or Math 112 or (B) advanced mathematical competence-trigonometry and satisfactory placement scores or Math 112 or 114.

222 Calculus and Analytic Geometry. I, II; 6 or 7 (E). Techniques of integration, conic sections, polar coordinates, vectors, two and three dimensional analytical geometry, infinite series. P: Math 221.

231 Calculus and Analytic Geometry. I, II; 5 or 6 (E). Introduction to calculus of functions of several variables; multiple integrals; introduction to differential equations. P: Math 222.

246 Elementary Discrete Mathematics. I, II; 3 cr. (N). Basic concepts of logic and set theory, combinatorics, graph theory, linear recurrences, relations, proof techniques such as induction and pigeonhole principle, graph coloring, Euclidean algorithm, and the binomial theorem. P: Math 120.


304 Brief Introduction to Differential Equations. I; 2 cr. (N). Primarily for transfer students and graduate students who have had three semesters of calculus without an introduction to differential equations. The differential equations part of Math 223. First and second order differential equations with physical examples; linear differential equations applications. P: Three semesters of calculus without differential equations. Not open to students who have had Math 223 at UW-Madison.

306 Introduction to Mathematical Statistics. (Also Stat 306.) I; 4 cr. (N-A).

310 Introduction to Mathematical Statistics. (Also Stat 310.) I; 4 cr. (N-A).


321 Applied Mathematical Analysis. I, II; 3 or 4 cr. (N-A). Vector algebra; geometry and vector of vectors, vector differential and integral calculus, theorems of Green, Gauss, and Stokes; complex analysis: analytic functions, complex integrals; residue theory. P: Math 223.

322 Applied Mathematical Analysis. I, II; 3 or 4 cr. (N-A). Sturm-Liouville theory; Fourier series, including mean convergence; boundary value problems for linear second order partial differential equations, including separation of variables and eigenfunction expansions. P: Math 321.


415 Mathematics for Dynamic Modeling. Sem; 3 cr. (N-A). Techniques for formulating models of time dependent phenomena in the social and biological sciences, as difference and differential equations. The underlying unity of the formulation, solution, and interpretation of such equations and linear algebra. P: Math 320 or 340, or other knowledge of matrix algebra.

414 Introduction to the Theory of Probability. (Also Stat 431; I, II; 3 or (N-A). Discrete sample spaces; combinatorial analysis; conditional probabilities, stochastic independence, Laplace limit theorem, Poisson distribution, laws of large numbers, random variables, central limit theorem, applications. P: Math 223.

434 Applied Linear Algebra, I; II; 3 or (N-A). Review of matrix algebra. Simultaneous linear equations, linear dependence and rank, vector spaces, eigenvalues and eigenvectors, diagonalization, quadratic forms, inner product spaces, norms, canonical forms. For students whose main field of interest is not pure mathematics. Discussion of numerical aspects and applications in the sciences. P: Math 320 or 340.

461 College Geometry I, II, 3 or (N-A). An introduction to Euclidean or non-Euclidean geometry at the college level. P: Math 223.


490 Undergraduate Seminar, I, II; 3 or (N-A). Problem solving techniques. P: So st and cons inst.

513-514 Introduction to Numerical Analysis. (Also Comp Sci 613-614.) 3 or per sem. (N-A)

521 Advanced Calculus, I; II; 3 or (N-A). Fundamental notions of limits, continuity, differentiation, and integration, for functions of one or more variables, convergence and uniform convergence of infinite series, and improper integrals. P: Math 233. Math 320 or 340 recommended.

522 Advanced Calculus, I; II; 3 or (N-A). Differentiable and Jacobian transformations of coordinates and of multiple integrals, line and surface integrals. P: Math 521.

525 Linear Programming Methods. (Also Comp Sci, Stat, Ind Engr 525.) I or (N-A)

541 Modern Algebra, I; II; 3 or (N-A). Groups, normal subgroups, Cayley's theorem, rings, ideals, homomorphisms, polynomial rings, abstract vector spaces. P: Math 320 or 340.


552 Elementary Geometric and Algebraic Topology. Sem; 3 or (N-A). Introduction to topology, Algebraic topology, emphasis on geometric aspects, including two-dimensional manifolds, the fundamental group, covering spaces, basic elements of homotopy theory, the Euler-Poincaré formula, and homotopy classes of mappings. P: Math 551 and 542.


565 Convex Figures and Inequalities. Sem; 3 or (N-A). Simplest geometrical properties of convex figures and their applications to the fundamental inequalities in use in everyday mathematical analysis. P: Math 320 or 340.


571 Mathematical Logic. (Also Philos 571.) I, II; 3 or (H-N-A). Basics of logic and mathematical protoc; propositional logic, first order logic, undecidability. P: Math 223.

623 Complex Analysis. I; II; 3 or (N-A). Elementary functions of a complex variable; conformal mapping; complex integrals; the calculus of residues. P: Math 521 or 522.


641 Introduction to Error-Correcting Codes. (Also ECE 641.) Sem; 3 or (N-A). A first course in coding theory. Linear codes: decoding, encoding, Hamming codes, BCH codes, Dual codes: weight distribution, cyclic codes: generator polynomial, check polynomial, Reed-Solomon codes; burst errors. Decoding BCH codes. P: Math 320 or 340, and cons inst.

681-682 Senior Honors Thesis. "(or (N-A). P: Sr st and enrollment in the Honors Program.

699 Directed Study, I, II; 3 or (A). For graduate courses and programs, see the Graduate School bulletin, Natural Sciences and Engineering.

MEDICAL MICROBIOLOGY

346 Service Memorial Institutes, 282-3351

Professors Walker (Chairman), Balish, Hong, Schell, Schultz, Smith; Associate Professors Brooks, Hinze, Manning, Proctor; Assistant Professors Byrne, Paulson, Welch; Lecturer Grover.

Undergraduate adviser: Professor Harry Hinze, 415 SMI, 282-1308

Courses in the Department of Medical Microbiology and the Department of Bacteriology are accepted as regular regular Letters and Science courses. Students who wish preparation for positions in the field of microbiology may take the major either in the Department of Medical Microbiology or in the Department of Bacteriology. Prior to declaring the major in Medical Microbiology, students should consult the undergraduate adviser.

Requirements for the Major

1. Completion of requirements for B.A. or B.S. degree.

2. The following courses including a minimum of 38 credits as indicated below are required, and the student should not depart from the sequence without consulting an adviser:

First year

Second year

One semester of general chemistry
One semester of organic chemistry including lab
Bact 101* Med Micro 350* (Optional: 2 or 353)
Med Micro 301* (Optional: 2 or 353)
Med Micro 302* Prev Med 603* (Optional: Bact 300)
Med Micro 699* Physiol 100* (Optional: Bact 300)
Med Micro 699* Physiol 104*

Fourth year

Med Micro 629* Med Micro 629* Med Chem 603* Med Chem 604* (Required courses for the major: 38 cr.)

3. Comp Sci 302 and a course in statistics are strongly recommended.


If the student considers the possibility of continuing for the Ph.D. degree, several other courses should be taken, preferably at the undergraduate level: comparative anatomy, comparative or human histology, general genetics, and calculus. For further information see the Graduate School bulletin, Natural Sciences and Engineering.

If the student intends to apply to the Medical School, PreMedicine at Wisconsin and the Medical School Bulletin should be consulted for additional requirements.

301 Pathogenic Microorganisms, I; 3 or (B-I). Lectures in basic microbiology of pathogenic microorganisms. P: Chem 341 and Bact 101 or 303 or cons inst.

302 Pathogenic Microorganisms Laboratory, I; 3 or (B-I). Conjugation in Med Micro 301 and cons inst.

303 Animal Parasites of Human Beings, II; 3 or (B-I). Morbidity, life history, diagnosis, and control of the important animal parasites. P: Intro course in zool.

355 Human Protozoology, SS; 3 or (B-I). Lab exercises and lectures dealing with the protozoan pathogenic for human beings. P: Intro microbiology or zoology or cons inst.

416 Medical Mycology, II, odd-numbered yrs; 2 or (B-A). Lectures and discussions: host-parasite relationships, pathogenesis, epidemiology, immunity, and diagnosis of systemic, subcutaneous and superficial mycotic infections. P: A course in general Bact, Med Micro 301 and cons inst.


528 Immunology, I; 3 or (B-A). Development and functions of immune response in animals; a comprehensive study of experimental humoral and cellular immunity. P: Two semesters chemistry and one semester zoology or general biology.

529 Immunology Laboratory. I; 2 or (B-A). Selected technics illustrating concepts of cellular and humoral immunity as a supplement to Med Micro 629. P: Two semesters of chemistry and one semester of zoology or general biology. Jr or Sr st; cons inst.

696 Senior Seminar. I; 3 or (B-A). Lectures on the history, current trends, and research in Medical Microbiology. P: Sr st in Med Micro.

699 Independent Work. I; II; 3 or (A) P: Cons inst.

MEDICAL SCIENCE AS AN UNDERGRADUATE MAJOR

It is possible for the exceptional student to be admitted to a medical school at the beginning of the senior year and still earn an undergraduate degree. (Most medical schools, however, prefer to admit students who have already earned a degree.)

Students who wish to attempt to earn a major in Medical Science must satisfy the following requirements: 1) satisfactory completion of at least 90 undergraduate degree credits; 2) at least 30 of those 90 credits must be in residence in the College of Letters and Science, UW-Madison in the semesters just prior to admission to medical school; 3) all L & S General Degree requirements must be satisfied with the exception of a major; and 4) satisfactory completion of the first year of anatomy, physiology, and with advancement to second year medical study.

For further information about the major in Medical Science, inquire at 104 or 307 South Hall.