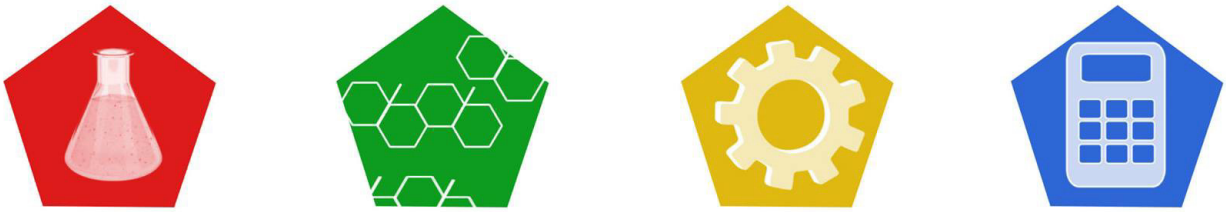
HOOSIER STEM ACADEMY

SCIENCE
TECHNOLOGY
ENGINEERING
MATHEMATICS



Course Catalogue
IUPUI
Fall 2023

IUPUI

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About the Hoosier Stem Academy

The Hoosier STEM Academy is a partnership among Ball State University, IUPUI, and Purdue University to provide graduate-level STEM courses for current Indiana STEM teachers who wish to be credentialed to teach dual credit courses. Courses are designed specifically to meet the needs of Indiana high school teachers, including courses that use online, blended, and/or distance education instructional designs, as well as traditional face-to-face options. STEM teachers who wish to participate must currently teach in underserved Indiana school corporations and Indiana schools experiencing a shortage of qualified STEM teachers. Participants will also be invited to participate in the Hoosier STEM Academy Mentoring Conference. Upon completion of a course with a grade of C or better, participants will receive a $1,375 stipend to help cover the cost of tuition, fees, and materials.

The Hoosier STEM Academy is now launching the Fall 2020 course catalog. Instruction for how to apply and register for courses at each of the partner institutions follow the list of offerings. Be sure to read carefully as each campus may have slightly different procedures at this time. Participants may take up to two courses per semester, but may only take a total of 15 hours over the four program semesters. Because graduate courses are challenging, it is suggested that participants take only one course per semester during the academic year.

Note: Any participant who registers for a course through the Hoosier STEM Academy is responsible for checking with their dual credit provider institution that the course will count toward their dual credit credential.

Application Process

1. **Go to** http://graduate.iupui.edu/admissions/apply.shtml

2. **Click on: Begin your application for graduate or professional school at IUPUI**

3. **If you are new to IUPUI**: click on "**Create New Guest Account**".

4. If you have been an IU or IUPUI student in the past, you will need access to our university e-mail and passphrase, including a new feature at IU that requires an additional dual authentication or "Duo" log-in.

- We recommend that you complete this initial registration step with assistance from UITS, by calling our help desk, available 24/7 at (317) 247-HELP or https://kb.iu.edu/d/abxl#iupui. They will walk you through the initial process to regain access to your IU/IUPUI account, reset your passphrase, and assist you with the new Duo authentication.
- Once you have your IU log-in information, Click on "**Log in with Guest acct/User ID**"

Application Steps

The first screen asks about your intentions by selecting one of two options:

Either choice below is acceptable for Hoosier STEM Academy. However, we recommend that you apply as a Graduate Non-Degree (GND) Student initially:

- To apply to a degree (Master's, PhD, professional) or Graduate Certificate program (Select this only if you are certain you will complete a certificate or MS degree. This will require letters of recommendation, transcripts, a personal statement, and GRE scores).

- **To apply to a Graduate Non-degree (GND) Program to explore courses for future enrollment in a graduate/professional degree program or to take continuing education courses (We recommend selecting this option)**

There are six sections to the on-line Graduate Non-Degree (GND) application.

1. Personal Information

2. Additional Information

3. Application Information (Academic Program: Grad Non-Degree; Academic Plan: Graduate Non-Degree program; Enrollment Summer 2018)

4. Department Information (Do not complete the red survey link for

"Departmental Information" – it is not needed for this program)

5. Affirmation Statement

6. Submit and Pay Fee ($60)

You <u>do not</u> have to send transcripts, letters of reference, or a personal statement as a GND Student.

Once you submit the application, you will receive an e-mail acceptance, usually within ~ 72 hours.

Next Steps

1. **For new IU/IUPUI Students:** Create your IU University username (e-mail address) and passphrase https://one.iu.edu/task/iu/create-my-first-iu-account
2. **Duo Authentication**: More information about the Duo phone app here: https://kb.iu.edu/d/bfgm

3. **Register for classes at the One.IU Student Center** (One.iu.edu → Student Center SIS)

   (Detailed instructions https://ittraining.iu.edu/sis/sis-job-aids/cross-module-general-job-aids/student_center/Student_Registration.pdf)
4. **Tuition and Fees: Upon completion of a course with a grade of C or better, the Hoosier STEM Academy will send a stipend of $1,375 to each participant.** At IUPUI, Graduate tuition is **$347.22** per credit hour plus fees. For a 3-credit hour course,

   Tuition: $1,041.66 plus Fees: $258.61 = Total Cost: $1,300.27 Parking: $160 per semester = Total cost (with parking): $1,460.77
5. **Academic Calendar: Fall 2020:** https://studentcentral.iupui.edu/calendars/official-calendar.html?term=Fall%202020&category=
6. **Parking Services:** A semester ST (student) pass costs ~$160. https://parking.iupui.edu
7. **To obtain your Crimson Card** (student ID) after acceptance to the Graduate School: https://crimsoncard.iu.edu. Your Crimson Card is a combination of: Official ID Card, Payment Card, Discount Card to local restaurants & attractions, Printing Card, and Library Card. Once you are on campus, plan to visit the Crimson Card office on the 2nd floor of the IUPUI Campus Center.

IU online course instructions

1. Getting Started – Using Online Class Search – Beginning your search is simple. You can search directly from the IU Online, online.iu.edu, by going to the 'Classes' tab on the menu at the top of the page. From there, if you select 'Search Classes' you will see a menu such as the example at the right. You can make your search as broad or specific as you need, but we suggest at minimum, filling out the 'semester' and putting in a keyword for a subject such as "statistics" or even "stats". There is also the enhanced search if you need other specific options.

2. Need More Info – Getting Course Descriptions – If you've found a class you're interested in, you use the One.IU public class search to find additional information, such as what time the class meets and the course description. You do not have to fill out every field, but at minimum you must select the 'Institution' (the campus), the 'Term', the 'Course Career', the 'Subject', and the 'Mode of Instruction' as highlighted in the example.

3. Register – Sign Up for the Class You Want – Once you've found a class you want to take; you need to register for it with the campus offering the course. For example, if you want to register for a physics course at IU East, you must register with IU East.

If you are a current IU Student – To register for an online undergraduate or graduate course offered at your campus of enrollment, you can register through One.IU as you would for any other class. To register for an online **graduate** course at a campus other than your campus of enrollment, you must contact the graduate department offering the course. See more at http://online.iu.edu/classes/how-register.php

If you are not a Current IU Student – You must first apply to the IU campus offering the course. To register for an online **graduate** course you must contact the department offering the course.

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Questions

Please contact Kizmin M. Jones with questions: kmjones4@bsu.edu.

IUPUI Courses

Anatomy

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	ATTRIBUTE
ANAT-D 502 Basic Histology	Lecture	4	23289	Open	12:00 p.m.-4:00 p.m.	TR	
ANAT-D 700 Research	Practicum	2	24203	Open	ARR	ARR	
ANAT-D 701 Translational Neuroscience	Activity	5	26082	Open	11:00 a.m.-12:30 p.m. (M/F) 11:00 a.m.-1:00 p.m. (W)	MWF	
ANAT-D 860 Research	Independent Study	1-10	21834	Open	ARR	ARR	
ANAT-D 861 Seminar	Seminar	1	27552	Open	ARR	ARR	
ANAT-D 878 Anatomy Teaching Practicum	Practicum	2	23762	Open	ARR	ARR	

ANAT-D 502 Basic Histology

Lecture and laboratory instruction on the microscopic structure of the basic tissues and organs of the body. Previous exposure to gross anatomy principles and dissection encouraged.

4 Credits.

ANAT-D 700 Educational Research Practicum

This course is designed to provide students with structured and supervised educational research experiences, as well as critical reviews of individual performance.

2 Credits.

ANAT –D 701 Translational Neuroscience

This graduate course uses a multidisciplinary approach to integrate the basic with the clinical neurosciences in understanding the human nervous system and select neurological disorders. Particular emphasis will be placed on deficits of motor function resulting from injury or disease. The functional anatomy of the brain and spinal cord will be studied using histologic atlas cross-sections and neuroradiologic images. Working as interdisciplinary teams, doctoral students in the biomedical sciences and rehabilitation sciences will explore relevant clinical cases in team-based learning activities.

5 Credits.

ANAT-D 860 Research

1-10 Credits.

ANAT-D 861 Seminar

Required yearly for all graduate students in residence. Literature and research reports and discussions by faculty, students, and invited distinguished visitors.

1 Credit.

ANAT-D 878 Anatomy Teaching Practicum

This course is designed to provide each student with supervised teaching experiences in Gross Anatomy. Histology, and Neuroscience, as well as critical reviews of all teaching duties.

2 Credits.

Biochemistry and Molecular Biology

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute
BIOC-B 500 Introductory Biochemistry	Lecture	3	24092	Open	2:00 p.m.-3:30 p.m.	MWF	
BIOC-B 811 Advanced Intermediary Metabolism	Lecture	1-3	25763	Open	ARR	ARR	
BIOC-B 854 Introduction to Research	Independent Study	1	24997	Open	ARR	ARR	
BIOC-B 855 Research	Research	1-12	21849	Open	ARR	ARR	
BIOC-B 890 Seminar	Lecture	1	21850	Open	12:00 p.m.-1:00 p.m.	W	

BIOC-B 500 Introductory Biochemistry

Structures of carbohydrates, proteins, lipids and nucleic acids. Basic principles of enzyme catalysis, protein synthesis, intermediary metabolism and nutrition.

3 Credits.

BIOC-B 811 Advanced Intermediary Metabolism

Tutorial instruction in specialized areas of metabolism.

1-3 Credits.

BIOC-B 854 Introduction to Research

Tutorial and laboratory instruction in biochemistry. Purpose is to introduce students in biochemistry to three different research programs.

1 Credit.

BIOC-B 855 Research

1-12 Credits.

BIOC-B 890 Seminar

1 Credit.

Biology

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute
BIOL-55600 Physiology I	Lecture	3	21852	Open	9:00 a.m.-10:15 a.m.	MW	
BIOL-55900 Endocrinology	Lecture	3	23869	Open	4:30 p.m. -5:45 p.m.	TuTh	
BIOL-59500 Professional Skills Bio (Special Assignments-Purdue)	Lecture	1-4	27240	Open	ARR	ARR	
BIOL- 56100 Immunology	Lecture	3	25790	Open	10:30 a.m.-11:45 a.m.	MW	
BIOL- 56600 Developmental Biology	Lecture	3	27994	Open	3:00 p.m. – 4:15 p.m.	Mw	
BIOL- 69600 Seminar	Seminar	1	21854	Open	ARR	ARR	
BIOL- 69600 Seminar	Seminar	1	24765	Open	ARR	ARR	
BIOL-T 574 The Immune System and Disease	Lecture	3	27160	Open	ARR	ARR	Online

BIOL-55600 Physiology I

General and comparative physiology. Principles of physiology. Nerve and muscle, temperature regulation, ion and water balance. The critical evaluation of original research papers.

3 Credits.

BIOL- 55900 Endocrinology

The study of hormone function. Consideration will be given to the role of hormones in growth, development, metabolism, homeostasis, and reproduction.

3 Credits.

BIOL- 56100 Immunology

Introduction to the basic principles and experimentation in cellular and humoral immunology.

3 Credits

BIOL- 56600 Developmental Biology

Principles of development with emphasis on concepts and experimental evidence for underlying mechanisms, including molecular, cellular, and supracellular approaches.

3 Credits.

BIOL- 69600 Seminar

Each semester there are several separate seminar offerings. They will likely be on the following topics: biochemistry, crystallography, ecology and population biology, genetics, mechanisms of development, microbiology, neurobiology, and plant physiology.

1 Credit.

BIOL-T 574 The Immune System and Disease

This course will introduce graduate students to immunology, focusing upon cells, molecules and mechanisms operating in the normal immune system and then assess the dysfunction associated with diseases and immune disorders.

3 Credits.

BIOL-T 574 The Immune System and Disease

This course will introduce graduate students to immunology, focusing upon cells, molecules and mechanisms operating in the normal immune system and then assess the dysfunction associated with diseases and immune disorders.

3 Credits.

Chemistry

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute
CHEM-59900 Special Assignment	Independent Study	1-4	22041	Open	ARR	ARR	Student must complete arrangements prior to registration
CHEM-59900 Special Assignment	Independent Study	1-4	24775	Open	ARR	ARR	Student must complete arrangements prior to registration
CHEM-59900 Special Assignment	Independent Study	1-4	25443	Open	ARR	ARR	Student must complete arrangements prior to registration
CHEM-59900 Special Assignment	Independent Study	1-3	25630	Open	ARR	ARR	Student must complete arrangements prior to registration
CHEM-69500 Seminar	Seminar	0	22042	Open	3:30 p.m.-5:30 p.m.	W	This is an S or F Graded Section
CHEM-69500 Seminar	Seminar	1	22043	Open	3:30 p.m.-5:30 p.m.	W	This is an S or F Graded Section
CHEM-69600 Special Topics in Chemistry	Lecture	3	23547	Open	6:00 p.m.-7:15 p.m.	MW	
CHEM-69600 Special Topics in Chemistry	Lecture	3	25059	Open	3:00 p.m. – 4:15 p.m.	TR	

CHEM-69600 Chemical Analysis Of Alcohol and Drugs (Special Topics in Chemistry)	Lecture	3	25059	Open	3:30 p.m. – 4:15 p.m.	TR	
CHEM-69600 Biomimetic Chemistry (Special Topics in Chemistry)	Lecture	3	29572	Open	6:00 p.m. – 7:15 p. m.	MW	

CHEM- 59900 Special Assignment

Directed reading or special work not included in other courses.

1-4 Credits

CHEM-69500 Seminar

Group meeting for review and discussion of important current literature in analytical, biological, inorganic, organic, and physical chemistry. Each graduate student is required to attend the seminar of his/her major subject.

0-1 Credit

CHEM- 69600 Special Topics in Chemistry

Lectures on selected topics of current interest.

1-3 Credits

Computer Science

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute

CSCI- 53600 Data Communication and Computer Networks	Lecture	3	22166	Open	2:00 p.m.-4:40 p.m.	T	Computer science graduate standing or instructor consent required
CSCI- 59000 Topics in Computer Science	Lecture	3	36143	Open	1:00 p.m. – 3:40 p.m.	W	Computer science graduate standing or instructor consent required
CSCI- 59000 Quantum Computing (Topics in Computer Science)	Lecture	3	36143	Open	1:00 p.m. – 3:40 p.m.	W	Computer science graduate standing or instructor consent required

CSCI- 53600 Data Communication and Computer Networks

Data communications: communication hardware technologies including local area and long-haul network hardware, circuit and packet switching, interfaces between computer and network hardware, and performance issues. Network architecture: protocol software and conceptual layering, reliable delivery over an unreliable channel, transport protocols, virtual circuits, datagrams, Internet working as a fundamental design concept, the client-server paradigm, naming and name binding, name servers, addressing and address resolution, routing and routing algorithms, congestion and flow control techniques, network file systems, distribution of computation, DARPA Internet protocols (TCP/IP) as examples of protocol organization.

3 Credits.

CSCI- 59000 Topics in Computer Science

Directed study for students who wish to undertake individual reading

and study on approved topics.

3 Credits.

Geology

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	ATTRIBUTE
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24255	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24256	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24257	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24258	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24259	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24260	Open	ARR	ARR	l For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24261	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24262	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	24263	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu

GEOLG-G 700 GEOLOGICAL PROBLEMS	Independent Study	1-5	25911	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	22401	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24264	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24265	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24266	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24267	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24268	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24269	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24270	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	24271	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu
GEOLG-G 810 Research	Research	1-12	26633	Open	ARR	ARR	For authorization, have your advisor contact the department at geology@iupui.edu

GEOL-G 700 GEOLOGIC PROBLEMS

Consideration of special geological problems.

1-5 Credits

GEOL-G 810 Research

1-12 Credits

Mathematics

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute
MATH-51100 Linear Algebra with Applications	Lecture	3	22612	Open	4:30 p.m. – 5:45 p.m.	MW	Prerequisite: MATH 26100
MATH-5110 Linear Algebra with Applications	Lecture	3	25644	Open	3:00 p.m.- 4:15 p.m.	MW	Prerequisite: MATH 26100
MATH-52500 Intro to Complex Analysis	Lecture	3	22987	Open	9:00 a.m. – 10:15 a.m.	TR	Prerequisite: MATH 26100 and MATH 26600
MATH-53700 Applied Mathematics for Scientists and Engineers I	Lecture	3	22614	Open	6:00 p.m. – 7:15 p.m.	MW	Prerequisite: MATH 26100 and MATH 26600
MATH-53700 Applied Mathematics for Scientists and Engineers I	Lecture	3	25645	Open	4:30 p.m. – 5:45 p.m.	MW	Prerequisite: MATH 26100 and MATH 26600
MATH-57100 Elementary Topology	Lecture	3	27733	Open	3:00 p.m.- 4:15 p.m.	TR	It is expected that students have completed MATH 44400
MATH-59800 Biomath Graduate	Lecture	3	26390	Open	3:00 p.m.-	MW	Graduate Student Seminar

Student Seminar (Topics in Math)					4:15 p.m.		
MATH-69200 Topics in Applied Mathematics	Independent Study	1-3	23211	Open	ARR	ARR	Before registering, student must contact individual math professor for course requirements and department permission. For more information call the Math Department at (317) 274-6918
MATH-69300 Topics in Analysis	Lecture	1-3	26209	Open	ARR	ARR	Student must contact individual math professor for course requirements and department permission. For more information call the Math Department at (317) 274-6918
MATH-69300 Topics in Analysis	Lecture	1-3	25433	Open	ARR	ARR	Student must contact individual math professor for course requirements and department permission. For more information call the Math Department at (317) 274-6918
MATH-69400 Topics in	Lecture	1-3	25377	Open	ARR	ARR	Student must contact individual math professor for

Differential Equations							course requirements and department permission. For more information call the Math Department at (317) 274-6918
MATH-69700 Topics in Topology	Lecture	1-3	34298	Open	ARR	ARR	Student must contact individual math professor for course requirements and department permission. For more information call the Math Department at (317) 274-6918
MATH-69700 Topics in Topology	Lecture	1-3	25646	Open	10:30 a.m. – 11:45 a.m.	MW	Student must contact individual math professor for course requirements and department permission. For more information call the Math Department at (317) 274-6918

MATH-5110 Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram-Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem, Shur triangular form; Jordon canonical form, quadratic forms.

3 Credits.

MATH- 52500 Intro to Complex Analysis

Complex numbers and complex-valued functions; differentiation of complex functions; power series, uniform convergence; integration, contour integrals; elementary conformal mapping.

3 Credits.

MATH- 53700 Applied Mathematics for Scientists and Engineers I

This course will cover theories, techniques and applications of partial differential equations, Fourier transforms, and Laplace transforms. The overall emphasis of the course will be on applications to physical problems.

3 Credits.

MATH-57100 Elementary Topology

Fundamentals of point set topology with a brief introduction to the fundamental group and related topics; topological and metric spaces; compactness and connectedness; separation properties; local compactness; introduction to function spaces; basic notions involving deformations of continuous paths.

3 Credits.

MATH- 59800 Topics in Math

Supervised reading courses as well as dual-level special topics courses are given under this number.

0-3 Credits.

MATH-69200 Topics in Applied Mathematics

Research topics of current interest in applied mathematics to be chosen by the instructor.

1-3 Credits.

MATH- 69300 Topics in Analysis

Research topics in analysis and their relationships to other branches of mathematics. Topics of current interest will be chosen by the instructor.

1-3 Credits.

Math-69400 Topics in Differential Equations

Research topics in differential equations related to physics and engineering. Topics of current interest will be chosen by the instructor.

1-3 Credits.

MATH- 69700 Topics in Topology

Research topics in topology and their relationships to other branches of mathematics. Topics of current interest will be chosen by the instructor.

1-3 Credits.

Physiology

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute
PHSL-F 595 Advance Physiology	Independent Study	1-15	22751	Open	ARR	ARR	
PHSL-F 701 Research in Physiology	Independent Study	1-15	22752	Open	ARR	ARR	
PHYSL-F 780 Special Topics in Physiology	Lecture	0-24	28569	Open	ARR	ARR	

PHSL-F 595 Advanced Physiology

1-15 Credits

PHSL-F 701 Research in Physiology

1-15 Credits

PHSL-F 780 Special Topics in Physiology

0-24 Credits

Physics

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute
PHYS-59000 Reading and Research	Independent Study	1-6	23997	Open	ARR	ARR	
PHYS-68500 Physics Seminar	Seminar	0	22783	Open	3:30 p.m. – 5:00 p.m.	R	

PHYS-59000 Reading and Research

Reading and research in Physics.

1-6 Credits.

PHYS-68500 Physics Seminar

0 Credits.

Statistics

TITLE	COMPONENT	CREDITS	CLASS	STATUS	TIME	DAY	Attribute

STAT-51200 Applied Regression Analysis	Lecture	3	22876	Open	4:30 p.m.-5:45 p.m.	MW	Prerequisite: STAT 51100
STAT-51500 Statistical Consulting Problems	Independent Study	1-3	22877	Open	ARR	ARR	Enrollment into STAT 51500 requires consent of advisor
STAT-51600 Basic Probability and Applications	Lecture	3	22878	Open	4:30 p.m.-5:45 p.m.	MW	It is expected that student have completed MATH 26100.
STAT-51900 Introductory Probability	Lecture	3	22879	Open	4:30 p.m.-5:45 p.m.	TR	It is expected that student have completed MATH 26100. STAT 51900 will include an optional problem solving session on Friday from 11:45 a.m.-1:00 p.m.
STAT-52100 Statistical Computing	Lecture	3	23707	Open	12:00 p.m. – 1:15 p.m.	TR	
STAT-52400 Applied Multivariate Analysis	Lecture	3	22880	Open	4:30 p.m.-5:45 p.m.	TR	It is expected that student have completed STAT 52800
STAT-52501 Generalized Linear Models	Lecture	3	24899	Open	3:00 p.m. – 4:15 p.m.	MW	It is expected that student have completed STAT 52800

STAT- 51200 Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance.

Use of existing statistical computer programs.

3 Credits.

STAT-51500 Statistical Consulting Problems

A written report of a consultation problem involving a designed experiment or sample in which the student participates with a faculty member.

1-3 Credits

STAT- 51600 Basic Probability and Applications

A first course in probability, intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem.

3 Credits.

STAT- 51900 Introductory Probability

Algebra of sets, sample spaces, combinatorial problems, conditional probability, independence, random variables, distribution functions, moment generating functions, special distributions, limit theorems.

3 Credits

STAT- 52100 Statistical Computing

A broad range of topics involving the use of computers in statistical methods. Collection and organization of data for statistical analysis; transferring data between statistical applications and computing platforms; techniques in exploratory data analysis; comparison of statistical packages, such as SAS and SPlus.

3 Credits.

STAT- 52400 Applied Multivariate Analysis

Extension of univariate tests in normal populations to the multivariate case, equality of covariance matrices, multivariate analysis of variance, discriminant analysis and misclassification errors, canonical correlation, principal components, factor analysis. Strong emphasis will be placed on use of existing computer programs.

3 Credits.

STAT- 52501 Generalized Linear Models

Generalized linear models, likelihood methods for data analysis, and diagnostic methods for assessing model assumptions. Methods covered include: multiple regression, analysis of variance for completely randomized designs, binary and categorical response models, and hierarchical loglinear models for contingency tables.

3 Credits.