



Program Catalog 2023-2025



Welcome from the Program Director

Dear Indiana K-12 Educators,

STEM Teach is pleased that you are interested in participating in professional development opportunities for science, technology, engineering and math designed specifically for classroom teachers. As a current K-12 in-service teacher in Indiana, you are eligible to participate in STEM Teach offerings at NO COST to teachers or schools.

In this program guide, you will find descriptions of all of the offerings tentatively planned for six semesters to include Fall 2023 through Summer 2025, as well as the necessary information of how to apply, register and participate in STEM Teach.

What is STEM Teach?

STEM Teach is a partnership of CELL (Center of Excellence in Leadership of Learning) and ICI (Independent Colleges of Indiana) and has been awarded a sixth round of funding from the Indiana Commission for Higher Education through the state of Indiana.

The primary concentration of funds will be for Indiana high school teachers who need graduate level courses in STEM discipline areas to meet the Higher Learning Commission (HLC) requirement to teach dual credit courses. This opportunity includes:

- Online graduate courses from participating institutions offered in biology, chemistry, computer science, IT, mathematics, physics, psychology, and technology. Once 18 graduate credits are earned, STEM Teach VI may also help to fund the completion of a master's degree.

STEM Teach provides offerings from various participating independent and public higher education institutions. These offerings for all K-12 teachers include:

- Tuition and textbooks/materials to complete dual credit credentialing, a master's degree or graduate certificate in STEM education from a participating higher education institution
- Scholarships for teachers to attend STEM-based conferences in Indiana
- Professional development and supplies to infuse STEM into daily classroom activities and lessons.

We hope that you find the offerings included in STEM Teach to be challenging, successful and rewarding experiences that will assist you with providing a high-quality STEM education to Hoosier students.

Please feel free to reach out to me with questions, or visit our website regularly for more information at www.stemteachindiana.org.

Irish Wlodarczyk

Director of Strategic Initiatives

STEM Teach VI is a project of the Independent Colleges of Indiana (ICI) in partnership with the Center of Excellence in Leadership of Learning (CELL) at the University of Indianapolis. Through a state grant, it brings together a group of ICI member colleges and public institutions to offer graduate courses for in-service K-12 teachers in Indiana.

Table of Contents

Getting Started

Applying to the Program.....	3
Registering for Offerings.....	3
Registration Calendar.....	3
Preparing for Offerings.....	3
Using the Program Catalog.....	4
Accessing My Account.....	4
Updating or Changing Contact Information.....	4
Viewing Class History.....	4
Staying Informed.....	4
Hearing from Previous Participants.....	4

Program Guidelines

Cancellation of Courses.....	5
Dropping a Course.....	5
HLC Policies for Dual Credit Teachers.....	5
Frequently Asked Questions.....	5

FALL 2023

BIOLOGY.....	7
CHEMISTRY.....	8
COMPUTER SCIENCE.....	9
IT.....	10
MATH.....	11
PHYSICS.....	13
PSYCHOLOGY.....	14
TECHNOLOGY.....	15
INTEGRATING STEM IN K-12 CLASSROOMS.....	16
CLASSROOM KITS.....	17

WINTER/SPRING 2024

BIOLOGY.....	19
CHEMISTRY.....	20
COMPUTER SCIENCE.....	21
IT.....	22
MATH.....	23
PHYSICS.....	24
PSYCHOLOGY.....	25
TECHNOLOGY.....	26
INTEGRATING STEM IN K-12 CLASSROOMS.....	27
CONFERENCES.....	28
CLASSROOM KITS.....	29

SUMMER 2024

BIOLOGY.....	31
CHEMISTRY.....	32
COMPUTER SCIENCE.....	33
IT.....	34

Table of Contents

MATH.....	35
PHYSICS.....	36
PSYCHOLOGY.....	37
TECHNOLOGY.....	39
INTEGRATING STEM IN K-12 CLASSROOMS.....	40
CONFERENCES.....	41
CLASSROOM KITS.....	42

FALL 2024

BIOLOGY.....	45
CHEMISTRY.....	46
COMPUTER SCIENCE.....	47
IT.....	48
MATH.....	49
PHYSICS.....	50
PSYCHOLOGY.....	51
TECHNOLOGY.....	52
INTEGRATING STEM IN K-12 CLASSROOMS.....	53
CONFERENCES.....	54
CLASSROOM KITS.....	55

WINTER/SPRING 2025

BIOLOGY.....	57
CHEMISTRY.....	58
COMPUTER SCIENCE.....	59
IT.....	60
MATH.....	61
PHYSICS.....	62
PSYCHOLOGY.....	63
TECHNOLOGY.....	64
INTEGRATING STEM IN K-12 CLASSROOMS.....	65
CONFERENCES.....	66
CLASSROOM KITS.....	67

SUMMER 2025

BIOLOGY.....	69
CHEMISTRY.....	70
COMPUTER SCIENCE.....	71
IT.....	72
MATH.....	73
PHYSICS.....	74
PSYCHOLOGY.....	75
TECHNOLOGY.....	76
INTEGRATING STEM IN K-12 CLASSROOMS.....	77
CONFERENCES.....	78
CLASSROOM KITS.....	79

Getting Started

Note: This is a working document and will change as course or offering information is updated.

Applying to the Program

STEM Teach VI accepts applications from teachers who are interested in taking graduate classes or receiving scholarships to attend conferences. *Applying* to STEM Teach means that teachers create an account in order for STEM Teach to verify teaching status and allow permission to receive notifications regarding application and registration windows for future offerings. An account is required to access the STEM Teach online teacher portal and register for offerings.

The application must be completed in one sitting. It takes approximately 10 minutes to complete the application.

Steps to apply include:

1. Locate teaching license number and school administrator contact information.

Attention dual credit teachers: Please note that a letter from a school administrator must be included with the application, and it must acknowledge the following:

- Teacher is applying to take courses or attend conferences through STEM Teach
- Statement of need indicating that the teacher needs to complete courses in “specified” content area for the school to continue offering dual credit courses (to students) OR statement of need indicating that teacher needs to complete courses in “specified” content area for the school to offer dual credit courses in the future (to students)
- Name, title, and signature of administrator on school or district letterhead

2. Create an account in the online teacher portal <https://stemteach.azurewebsites.net/>
3. Watch for an email from STEM Teach within a few weeks of the application. If the application was approved, instructions will be provided for registration based on priority status (dual credit teachers have designated priority registration windows). For more detailed information about the application process visit the STEM Teach website at www.stemteachindiana.org.

Registering for Offerings

A Sneak Peek and/or Quick Look will be available prior to and during each semester. Detailed course information is released prior to each semester via the course catalog on the STEM Teach website. Teachers should review course syllabi and full course descriptions posted online **prior** to registering for each offering.

After reviewing the course offerings, teachers may log into the STEM Teach portal and register for courses or conference scholarships during each registration window. Teachers may register for one course, one opportunity for a classroom kit, and one conference per semester/term.

STEM Teach VI Timeline

Semesters	STEM Teach Term	Offering Window
Fall 2023	Full, FA I, FA II	August - December
Winter/Spring 2024	Full, WS I, WS II	January - May
Summer 2024	Full, SU I, SU II	May - August
Fall 2024	Full, FA I, FA II	August - December
Winter/Spring 2025	Full, WS I, WS II	January - May
Summer 2025	Full, SU I, SU II	May - August

Registration Calendar

A Registration Calendar is an additional resource that is available periodically to assist accepted teachers with planning ahead for registration. The calendar can be accessed on our website: <https://stemteachindiana.org/wp-content/uploads/2023/08/TDCI-STEM-Calendar-2023-2024.pdf>

Preparing for Offerings

After teachers register for an offering, they will receive an automated confirmation email from STEM Teach verifying the

or materials to each participant for each course. Some of these textbooks or materials are rentals and must be returned per the institution's instructions while others may be kept by the participant. Additionally, some textbooks are accessed online. Participants should work with the representative at the college or university to understand the materials or textbook policy for each course.

Using the Program Catalog

The Program Catalog is provided as a tool for teachers to view brief descriptions of offerings and plan out the courses or conference scholarship opportunities that they would like to participate in from Fall 2023 through Summer II 2025. Full course descriptions will be available in the online Course Catalog and through the teacher portal when registration opens for each semester.

The program catalog may be updated periodically. If you use this resource regularly, be sure to check for updated versions on the website.

Accessing My Account

After teachers are accepted in to the STEM Teach program, they may access their account through the STEM Teach portal at any time by logging in at <https://stemteach.azurewebsites.net>.

Updating or Changing Contact Information

If a participant's contact information has changed such as school and corporation name and address, home address, phone number, etc., please email STEM Teach at stemteach@uindy.edu.

Viewing Class History

To view current or completed classes, click on Classes from the Students menu to view registration or drops for each class/semester.

Staying Informed

STEM Teach VI will send out updates via email from time to time. Visit the homepage of the website to sign up for updates. www.stemteachindiana.org to view previous newsletters.

Providing Feedback on an Offering

After teachers complete a course they will be invited via email to complete a survey. The survey is an invitation to provide anonymous feedback to STEM Teach regarding the overall program and to the higher education institution offering the course regarding the course and instructor.

Hearing from Previous Participants

STEM Teach asked previous participants what they would tell fellow teachers about the program. Some of the responses are included below:

"Enroll and embrace the challenge. Teachers need to understand that it is not going to be easy but enjoy the struggles and successes."

"The courses are offered and taught in a way that is conducive to a busy school schedule, and allows some flexibility as needed when schedules change. Content is very relevant to what I am teaching and provides enough educational background to help me teach topics better at the college level."

"I would encourage them to participate. The environment was encouraging and friendly. Everyone in the course was also a high school math teacher, so we were all having the same experience. The instructor was very understanding, and the classmates were very helpful."

"Being online, this format allows teachers to earn college credit from home, allowing work and home activities to continue as normal. Content from these courses has been very applicable to the dual credit course I teach... making me break down difficult concepts into manageable steps and make me more effective in helping students."

"The STEM Teach program is great and I would encourage others to participate because the courses are free, and the quality of the education is great."

Program Guidelines

Cancellation of Courses

Minimum enrollments are needed for each offering. After registration is completed, STEM Teach will determine if there are enough registrants for each offering. In the event there are not enough teachers enrolled in a course, STEM Teach will notify teachers of any cancellations for which they were registered and make every opportunity to offer an alternative course.

Dropping a Course

Teachers should give thoughtful consideration to registration and enrollment in this grant-funded opportunity. If a teacher is unable to complete a course or attend a conference, another teacher will have missed out on the opportunity to participate.

If a teacher needs to drop/withdraw from the course for emergency reasons, inform the instructor **and** STEM Teach VI as soon as possible. The instructor will inform the teacher if he/she needs to go through the institution's drop process.

If a teacher does not successfully complete the offering or withdraws after registration from a STEM Teach VI offerings, they may not have the opportunity to register for future courses or offerings through STEM Teach.

HLC Policies for Dual Credit Teachers

STEM Teach offers graduate courses to in-service teachers to complete the requirements from the Higher Learning Commission (HLC) for teaching dual credit courses. The HLC requires that all dual credit teachers have a master's degree in the specific content area in which they teach a dual credit course or a master's degree plus 18 graduate credit hours in the specific content area. For more information visit the HLC website at http://download.hlcommission.org/FacultyGuidelines_2016_OPB.pdf. Teachers must work with their school's primary dual credit provider prior to registering for a course to ensure that a course will count towards credentialing.

Frequently Asked Questions

HOW DO I BECOME ELIGIBLE TO PARTICIPATE IN STEM TEACH?

In order to be eligible for STEM Teach, teachers must apply via an online application to participate in this grant-funded opportunity.

WHO IS ELIGIBLE FOR COURSES AND CONFERENCE SCHOLARSHIPS?

All accepted applicants must be currently teaching in an Indiana school and may be required to submit a letter of verification from a school administrator.

MAY TEACHERS ENROLL DIRECTLY INTO COURSES AT ANY INSTITUTION THAT IS PARTICIPATING IN STEM TEACH?

No. Teachers must register for courses through the STEM Teach teacher portal to be eligible for this grant-funded opportunity.

WILL TEACHERS RECEIVE A DEGREE OR CERTIFICATE FROM STEM TEACH?

STEM Teach VI does not provide degrees or teaching certificates; it provides opportunities to take graduate level courses at participating higher education institutions that may count toward degrees or certificates. Information can be found in the course details of the Program Catalog and Online Catalog.

ARE THERE FEES OR CHARGES ASSOCIATED WITH TAKING STEM TEACH VI COURSES?

Tuition and book/materials fees are at no cost to eligible teachers who participate in STEM Teach VI.

HOW DO I PROVIDE FEEDBACK ON A COMPLETED COURSE?

After completion, each teacher will receive an email with a link to a survey for feedback about the program, course, instructor, etc. Participation in surveys is strongly encouraged to continue improving the STEM Teach program.

WILL TEACHERS BE ABLE TO REGISTER FOR A COURSE IN EACH TERM OR SEMESTER?

Registration is not guaranteed each term/semester. For some courses, a limited number of seats are available.

Fall 2023 Courses

Full Semester, Fall I, and Fall II

Biology

Chemistry

Computer Science

IT

Mathematics

Physics

Psychology

Technology

Integrating STEM in K-12 Classrooms

Conferences

Classroom Kits



Biology

Fall 2023

Course	Overview	Description	Related Courses by Institution
BIO 581 Genome Science Indiana State University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	This course provides a fundamental review of the cellular and biomolecular basis of inheritance using a genome-scale perspective for graduate students. It provides a description of emerging genomics technologies and techniques, basic bioinformatics methods, and tool applications within the domains of medicine and biology.	BIO 508 General Immunology (W/S 24) BIO 554 Animal Behavior (W/S 25) BIO 580 General Evolution (FA 24) BIO 581 Genome Science (FA 23) BIO 633 Advanced Pathophysiology (SU 24) BIO 691 Anatomical Dissection - Tentative (SU I 25) -
BIOL 501 Genome Science Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course provides an intermediate understanding of chemical principles in biology and focuses on the study of proteins, carbohydrates, lipids, and nucleic acids in a biological context. Enzymes, metabolism, and gene expression are also investigated.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 506 Microbiology Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course examines the structure, physiology, and activities of pathogenic and non-pathogenic microorganisms. Emphasis is placed on the interaction of microorganisms with each other, their hosts, and the environment. Course activities will apply principles of microbiology to public health, biotechnology, environmental science, and industrial processes.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 502 Cell Biology Indiana Wesleyan University <i>Fall II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course provides an intermediate understanding of chemical principles in biology and focuses on the study of proteins, carbohydrates, lipids, and nucleic acids in a biological context. Enzymes, metabolism, and gene expression are also investigated.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)

[Back to Table of Contents](#)

Chemistry

Fall 2023

Course	Overview	Description	Related Courses by Institution
<p>CHEM 530 Organic Spectroscopy Indiana University <i>Full Semester</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course is intended to give students a more complete picture of how spectroscopic methods are used to elucidate the structure of complex organic molecules. Topics that will be covered include infrared (IR), mass spectroscopy (MS), nuclear magnetic resonance (NMR), and UV-visible spectroscopy. In this course, we will first develop basic understanding of various theories behind IR, MS, and NMR spectroscopy, and then we will concentrate on the interpretation of spectra and the information they can provide about details of molecular structure.</p>	<p>CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24)</p> <p>Please note: Addiitonal offerings to be determined.</p>
<p>CHEM 530 Organic Spectroscopy Indiana University <i>Full Semester</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This is a graduate level course that will touch on all the fundamental areas of Physical Chemistry (kinetics, thermodynamics, equilibrium, quantum). Knowing that one course cannot sufficiently cover all the areas of physical chemistry in one semester, focus and emphasis is on content that expands the students' knowledge in these key areas beyond what is expected at undergraduate level and relates to concepts that are likely to be taught in high school and introductory chemistry courses. A key aspect will be to develop students' understanding of advanced physical chemistry concepts and ability to apply this knowledge towards fundamental chemistry concepts and problems through quantitative problem solving, discussions and presentations.</p>	<p>CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24)</p> <p>Please note: Addiitonal offerings to be determined.</p>

[Back to Table of Contents](#)

Computer Science

Fall 2023

Course	Overview	Description	Related Courses by Institution
<p>CS 617 Intro to Programming Ball State University <i>Full Semester</i> *Cohort 1*</p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Introduction to programming in a contemporary, mainstream, high-level programming language such as Python. Use of numeric and textual data. Use of data structures such as arrays, lists, sets, and dictionaries/maps such as those implemented by hash tables. Covers a broad introduction to using programs to solve problems, introduces the student to common terms and concepts used when programming, and focuses on the python programming language.</p> <p>Please note: This course is a prerequisite for all related offerings and must be taken prior to any other offering in the sequence.</p>	<p>Cohort 1 - Summer I 2023: CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (FA 24) - CS 617 Intro to Programming (FA 23) CS 621 Data Analytics - Prerequisite: CS 617 (W/S 24) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (Wi/S 25) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (SU 24) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (SU 25) -</p> <p>Cohort 2 - TBD CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (TBD) - CS 617 Intro to Programming (TBD) CS 621 Data Analytics - Prerequisite: CS 617 (TBD) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (TBD) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (TBD) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (TBD) -</p>

[Back to Table of Contents](#)

IT

Fall 2023

Course	Overview	Description	Related Courses by Institution
IT 510 Intro - Information Tech Valparaiso University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Reviews the academic discipline of IT, including pervasive IT themes, IT history, organizational issues, and relationship of IT to other computing disciplines. This also includes practicum to illustrate the nature of platforms and technologies currently employed in industry.	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)

[Back to Table of Contents](#)

Math

Fall 2023

Course	Overview	Description	Related Courses by Institution
MATH 530 Abstract Algebra University of Indianapolis <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 4	This course is an in-depth study of topics from group, ring, and field theory, including properties of polynomials. This provides the foundation for exploration of advanced topics such as Sylow Theory, field extensions, Galois Theory, and geometric constructions. Connections will be made to topics covered in high school math classrooms.	MATH 510 Applied Statistical Methods (SU 25) MATH 520 Number Theory (SU 24) MATH 530 Abstract Algebra (FA 23) MATH 540 Modern Geometries (W/S 24 & 25) MATH 550 Mathematical Analysis (FA 24)
MATH 641 Number Theory University of Southern IN <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	In this course, students are expected to prove theorems in elementary number theory; apply number theoretic concepts to solve various types of problems; communicate (through both writing and speaking) about various topics in elementary number theory using appropriate notation and terminology. This course will cover various topics in number theory such as divisibility, modular arithmetic, arithmetic functions, continued fractions, and cryptology.	MATH 603 Fund Concepts of Algebra (W/S 25) MATH 604 Fund of Geometry (SU II 25) MATH 605 Problem Solving In Math (W/S 24) MATH 621 Tech for Teaching Math (FA 24) MATH 641 Number Theory (FA 23) STAT 638 Models of Stat Inference (SU II 24)
MATH 501 Linear Algebra Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course offers an intermediate treatment of the theory and application of linear algebra. The goal of this course is to provide a framework for applying linear algebra to a variety of mathematical problems. Topics include vector spaces, linear transformations, diagonalization, inner product spaces, Markov Chains, and the Jordan canonical form. There is an emphasis on understanding and writing proofs.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 505 Statistical Methods Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	This applied statistics course presents a variety of statistical topics in the context of real world data. The goal of this course is to demonstrate the broad applicability of advanced statistical techniques. Topics include probability, inferences for one and two sample means, inferences for more than two sample means, inferences for one and two sample proportions, multiple- comparison procedures, and nonparametric methods.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)

[Back to Table of Contents](#)

Math

Fall 2023

Course	Overview	Description	Related Courses by Institution
<p>MATH 502 Abstract Algebra Indiana Wesleyan University <i>Fall II</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course is a study of algebraic structures and major theorems for these. Group theory and ring theory are reviewed and further developments are presented. An introduction to field theory and Galois theory is included.</p>	<p>Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)</p>

[Back to Table of Contents](#)

Physics

Fall 2023

Course	Overview	Description	Related Courses by Institution
<p>PHYS 505 Quantum Mechanics II Indiana Wesleyan University <i>Fall I</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course will develop quantum theory and apply it to physical systems. Beginning with the fundamental experiments and phenomena, the course develops the concepts of quantum mechanics, their mathematical expression in the methods of Schrödinger and Heisenberg and the solution of problems that exhibit quantum phenomena. Use of technology for visualization is a key solution technique.</p> <p>Prerequisite Courses: PHYS 501 or equivalent (recommend PHYS 502, PHYS 503 or equivalents).</p>	<p>PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)</p>
<p>PHYS 506 Thermodynamics Indiana Wesleyan University <i>Fall I</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course develops the laws of thermodynamics from macroscopic observations and then demonstrates how they arise from the statistical, collective behavior of atoms and molecules. The statistical development encompasses classical systems (kinetic theory, transport phenomena, and ensemble theory) and quantum systems (systems of bosons and fermions).</p> <p>Prerequisite Courses: PHYS 501 or equivalent (recommend PHYS-502, PHYS-503 or equivalents)</p>	<p>PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)</p>

[Back to Table of Contents](#)

Psychology

Fall 2023

Course	Overview	Description	Related Courses by Institution
<p>MPSY 5100 Multicultural Psychology Indiana Tech <i>Fall I</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course surveys relevant theories, research, assessment and practice of multicultural psychology and the factors important to issues of cultural and individual differences.</p>	<p>MPSY 5050 Writing in Psychology (SU II 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) - -</p>
<p>MPSY 6000 Psychopathology Indiana Tech <i>Fall II</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course is an examination of the issues and controversies related to the conceptualization and diagnosis of mental disorders. The etiology, onset, symptoms, clinical features and prognosis for mental disorders throughout the lifespan will be explored.</p>	<p>MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -</p>

[Back to Table of Contents](#)

Technology

Fall 2023

Course	Overview	Description	Related Courses by Institution
TECH 501 Digital Media Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	An exploration of Richard E. Mayer's multimedia learning principles for the design of digital media including images, video, audio, and text-based presentations. Learners will apply these principles as they gain competency with various software applications to deliver instruction.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.
TECH 502 Digital Content Indiana Wesleyan University <i>Fall II</i>	Location: Online Format: Asynch Graduate Credits: 3	An exploration of the varied definitions and criteria for digital literacy and digital citizenship. From the context of first and second level digital divides, learners will gain an understanding of the concepts that are critical to the development of programs, tools, and resources designed to create a generation of digitally literate citizens.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Fall 2023

Course	Overview	Description	Related Courses by Institution
<p>EDCI 55490 Assessment in STEM Purdue University <i>Fall II</i> *Cohort 1*</p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course is designed to help teachers of mathematics recognize the link between productive assessment and productive instruction, using the mathematics education standards for teacher competence in educational assessment. This course is designed to help teachers meet those professional standards and understand the public pressure as well as instructional need for effective formative and summative assessment.</p>	<p>Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24)</p> <p>Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)</p>
<p>EDUC 656 Teacher Engineering Ed University of Indianapolis <i>Fall II</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course is designed for K-12 teachers who seek to understand the need to build more engineering capacity in K-12 education, expand practice by integrating engineering principles & projects into content areas, and design experiences through an inclusive and accessible lens. Teachers will be introduced to multimodal composition and inclusive design to create more accessible books, games, and classroom materials. Modules are designed to enable teachers to flexibly apply the projects in their classrooms or other formal/informal contexts. The modules will range from the use of physical computing devices to the design of cranky cardboard contraptions. A service learning/community-based project will serve as a capstone experience.</p>	<p>EDUC 654 Designing PBL Unit (SU I 24 & 25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W/S 24 & 25)</p>

[Back to Table of Contents](#)

Classroom Kits

Fall 2023

Course	Overview	Description
3Doodler Create+ Essential Pen Set and 3Doodler Project Book Classroom Kit	Location: Online Teacher Level: 6 - 8	<p>The 3Doodler Create+ is the latest version of the world's first 3D Printing Pen! Now with dual drive, the all new 3Doodler Create+ is re-engineered to give you an ultra smooth and enhanced Doodling experience. Improvements include greater control of fast/slow speeds for different Doodling techniques, more reliable performance with different plastic types, greater durability, and new monochromatic pen colors. The kit will include one 3Doodler Create+ 3D Printing Pen, x3 packs of ABS & PLA 3mm 3Doodler plastic refills in 15 colors (that's over 600ft / 180m of Doodling right out of the box!), the Ultimate Guide to Doodling with 5 projects, a user Manual, a power adaptor, a set of tools and a 3Doodler Project Book.</p> <p>The 3Doodler Project Book will guide you through the basics of how to use your 3Doodler 3D printing pen and take you on a journey all the way from beginner to master doodler!</p>
DNA Necklace Classroom Kit	Location: Online Teacher Level: 9 - 12	<p>Using the kit, students will extract DNA by lysing their cheek cell sample, then watch as wispy white strands of their own DNA precipitate out of a solution containing ethanol. After transferring their DNA to plastic microcentrifuge tubes, students fashion the tubes into DNA pendant necklaces using colorful string. This is one easy lab activity that really gets your students talking about DNA and science! The kit Includes enough materials for 32 students.</p> <p>The kit also includes a 1-year access to digital resources that include a teacher's manual, student guide, fill-in answer sheets, editable assessment questions, whiteboard resources, and more.</p>
KEVA Brain Builders Classroom Kit	Location: Online Teacher Level: K - 5	<p>Translating 2D images into 3D reality is an essential STEM skill, and KEVA Brain Builders help children think in multiple dimensions through fun and interactive task cards. This classroom kit stimulates problem solving, creativity, and visual perception. The kit is stored in a small carrying case.</p>

[Back to Table of Contents](#)

Winter/Spring 2024 Courses

Full Semester, W/S I, and W/S II

Biology

Chemistry

Computer Science

IT

Mathematics

Physics

Psychology

Technology/IT

Integrating STEM in K-12 Classrooms

Conferences

Classroom Kits



Biology

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
BIO 508 General Immunology Indiana State University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	BIO 508 General Immunology (W/S 24) BIO 554 Animal Behavior (W/S 25) BIO 580 General Evolution (FA 24) BIO 581 Genome Science (FA 23) BIO 633 Advanced Pathophysiology (SU 24) BIO 691 Anatomical Dissection - Tentative (SU I 25) -
BIOL 503 Systems Biology Indiana Wesleyan University Winter/Spring I	Location: Online Format: Asynch Graduate Credits: 3	This course investigates the major principles and concepts of biological systems, including the fundamentals of mathematical and physiological modeling, a detailed analysis of gene, protein, and metabolic systems, as well as the application of systems biology in health and medicine.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 504 Genetics Indiana Wesleyan University Winter/Spring II	Location: Online Format: Asynch Graduate Credits: 3	This course integrates basic principles of genetics in eukaryotes and prokaryotes at the level of molecules, cells, and multi-cellular organisms including humans. Also covered are Mendelian genetics, the molecular basis of gene function as well as mutation, transmission systems, population, and evolutionary genetics. Subtopics also include the structure and function of chromosomes and genomes along with biological variation resulting from recombination, mutation, and selection.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)

[Back to Table of Contents](#)

Chemistry

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
<p>CHEM 510 Inorganic Chemistry Indiana University <i>Full Semester</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>In this course, students will be introduced to fundamental concepts and theories and apply them to understand and explain the role of inorganic chemistry including descriptive chemistry, bonding in coordination chemistry, organometallic chemistry, special topics in inorganic chemistry and metal ions in a biological inorganic chemistry. In the last weeks of the semester, students will demonstrate their knowledge by analyzing and discussing research papers in these topics and presenting to their colleagues.</p>	<p>CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24)</p> <p>Please note: Additional offerings to be determined.</p>
<p>CHEM 555 Intro - Biochemistry Indiana University <i>Full Semester</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course covers the following topics and concepts: (1) structure and function of biological molecules—proteins, lipids, carbohydrates, and nucleic acids, (2) protein composition and structure, enzyme kinetics, catalytic and regulatory, (3) methods by which cells transduce and store energy—metabolic cycles and pathways, and (4) ways in which cells respond to environmental changes.</p>	<p>CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24)</p> <p>Please note: Additional offerings to be determined.</p>

[Back to Table of Contents](#)

Computer Science

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
<p>CS 621 Data Analysis Ball State University Full Semester <i>*Cohort 1*</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Discussion of data acquisition, transformation, manipulation and visualization and their applications on large-scale unstructured, semi-structured and structured data. Discussion of data analytics methods, algorithms, software, and systems. Use of large-scale data processing systems. Comparison of the current and future trends for big data analytics.</p>	<p>Cohort 1 - Summer I 2023: CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (FA 24) - CS 617 Intro to Programming (FA 23) CS 621 Data Analytics - Prerequisite: CS 617 (W/S 24) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (Wi/S 25) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (SU 24) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (SU 25) -</p> <p>Cohort 2 - TBD CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (TBD) - CS 617 Intro to Programming (TBD) CS 621 Data Analytics - Prerequisite: CS 617 (TBD) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (TBD) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (TBD) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (TBD) -</p>

[Back to Table of Contents](#)

IT

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
IT 502 Intro to Programming Valparaiso University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	A first course in problem-solving through algorithm development and analysis and software design. Students design and write elementary and intermediate sized programs, including intensive study of Java or other programming language(s) of similar scale and complexity.	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)

[Back to Table of Contents](#)

Math

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
MATH 540 Modern Geometries University of Indianapolis <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 4	A review of the basic techniques of straight edge and compass construction, including constructions requiring propositions from Book III of Euclid's Elements (ca. 300 BC), gives students an intuitive foundation necessary for the approaches that follow.	MATH 510 Applied Statistical Methods (SU 25) MATH 520 Number Theory (SU 24) MATH 530 Abstract Algebra (FA 23) MATH 540 Modern Geometries (W/S 24 & 25) MATH 550 Mathematical Analysis (FA 24)
MATH 605 Problem Solving in Math University of Southern IN <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Theory and practice in mathematical problem-solving; exploration of a variety of techniques; and finding solutions to problems in arithmetic, algebra, geometry, and other mathematics for teachers of mathematics and curriculum supervisors.	MATH 603 Fund Concepts of Algebra (W/S 25) MATH 604 Fund of Geometry (SU II 25) MATH 605 Problem Solving In Math (W/S 24) MATH 621 Tech for Teaching Math (FA 24) MATH 641 Number Theory (FA 23) STAT 638 Models of Stat Inference (SU II 24)
MATH 503 Advanced Calculus Indiana Wesleyan University <i>Winter/Spring I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is an advanced multivariate treatment of calculus for the mature student of mathematics. Course content will include advanced treatment of differentiation and integration as well as advanced topics including Fourier Series and special functions.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 504 Real Analysis Indiana Wesleyan University <i>Winter/Spring II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course offers a rigorous study of the real numbers and associated functions in order to deepen students' understanding of calculus and raise their ability to effectively formulate and communicate mathematics. It reviews concepts of real-valued functions defined on the real line and proceeds to extend these results as applicable to complex valued functions and metric spaces. It also includes a rigorous examination of properties of some important special functions.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)

[Back to Table of Contents](#)

Physics

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
<p>PHYS 501 Mathematical Methods Indiana Wesleyan University <i>Winter/Spring II</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Coming Soon</p>	<p>PHYS 501 Mathematical Methods (W/S II 24) PHYS 502 Classical Mechanics (SU I 24) PHYS 503 Electromagnetism (SU II 24) PHYS 504 Intro- Quan Mechanics (FA I24) PHYS 505 Quantum Mechanics II (FA II 24) PHYS 506 Thermodynamics (W/S I 25)</p>

[Back to Table of Contents](#)

Psychology

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
MPSY 6800 Advanced Biopsychology Indiana Tech <i>Winter/Spring I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is designed to provide students with an in-depth study of normal and abnormal human behaviors from the perspective of brain functioning. A review of the foundational knowledge and examination of current research of the relationship between biological function of the brain and nervous system/neuroanatomy will be explored.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -
MPSY 5800 Legal & Ethical Issues Indiana Tech <i>Winter/Spring II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is designed to be an overview of the local and federal laws that govern the practice of psychology. In addition, the ethical guidelines that shape the practice of psychology in various different settings will be studied. Students will examine ethical dilemmas faced by those who work in the psychological field.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -

[Back to Table of Contents](#)

Technology

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
TECH 503 Instr Design Theory Indiana Wesleyan University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	The course introduces instructional design principles and practices to the development of learning opportunities in face to face, online, and blended modalities. Particular attention will be focused on the process of aligning learning outcomes with instructional strategies, assessments, and effective use of technology-based learning activities.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.
TECH 504 Tech - Learning Comm Indiana Wesleyan University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	An exploration of the varied ways in which digital technology can serve a valuable role in the creation and maintenance of learning communities, in the collection of data, in communication with stakeholders, and in the facilitation of personal and institutional change.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Winter/Spring 2024

Course	Overview	Description	Related Courses by Institution
EDCI 55850 Tech Design Purdue University Winter/Spring I *Cohort 1*	Location: Online Format: Asynch Graduate Credits: 3	Engineering and technology design has gained considerable traction in many K-12 schools. In this course, we will examine principals of engineering design and technology as well as where and how engineering and technology design best fits in a K-12 integrated STEM curriculum. Course participants will engage in authentic engineering and technology design experiences. Course participants will also design, develop, deliver integrated lessons that help K-12 students develop the knowledge, skills, and practices of engineering and technology design.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDCI 55800 Integ STEM Methods Purdue University Winter/Spring II *Cohort 1*	Location: Online Format: Asynch Graduate Credits: 3	This course invites students to explore the complimentary concepts of identity and culture in order to foster an ethical educational disposition and practice in regards to people unlike ourselves. We will explore the concepts of race, gender, sexuality, nationality, belief, and ability as elements that comprise culture – and in doing so to develop critical questions around our own identities, perceptions of others, and roles as educators.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55850 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55950 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55850 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55950 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDUC 653 Integrating Tech - STEM University of Indianapolis Winter/Spring I	Location: Online Format: Asynch Graduate Credits: 3	Technology supports teachers in their efforts to empower and engage students. Modules are designed to help participants interact with different roles that technology plays in STEM education: 1) technology as educational/instructional technology, 2) technology as coding or computational thinking; and 3) content-specific technology as tools and practices used by science, mathematics, and engineering practitioners. In each module, participants will not only explore new technologies as learners, but also design learning materials/activities that integrate those new technologies.	EDUC 654 Designing PBL Unit (SU I 24 & 25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W/S 24 & 25)

[Back to Table of Contents](#)

Conferences

Winter/Spring 2024

Course	Overview	Description
Indiana STEM Education Conference	Location: Purdue Univ Date: 1/11/24 Time: 8:30am - 3: 30pm Teacher Level: K - 12	<p>The eighth-annual Indiana STEM Education Conference will be hosted by Purdue University on Thursday, January 11, 2024 from 8:30 AM – 3:30 PM EST. The 2024 conference will include in-person participation and will take place at Purdue University.</p> <p>The theme for the 2024 conference is “Resourcing STEM Education.” Presentations will include resources and strategies to promote student learning of STEM academic standards.</p> <p>Twelve conference scholarships will be available.</p>
HASTI & ICTM Conference	Location: Marriott East Date: 2/18/24 - 2/20/24 Time: TBA Teacher Level: K - 12	<p>The HASTI & ICTM Conference will be February 18 – 20, 2024 at the Marriott East – Indianapolis. It features over 100 sessions and workshops spanning three days along with an Exhibit Hall featuring leaders in the STEM industry.</p> <p>Twelve conference scholarships will be available.</p>

[Back to Table of Contents](#)

Classroom Kits

Winter/Spring 2024

Course	Overview	Description
TBA	Location: Online Teacher Level: K - 5	Coming Soon
TBA	Location: Online Teacher Level: 6 - 8	Coming Soon
TBA	Location: Online Teacher Level: 9 - 12	Coming Soon

[Back to Table of Contents](#)

Summer 2024 Courses

Full Semester, Summer I, and Summer II

Biology

Chemistry

Computer Science

Mathematics

Physics

Psychology

Technology/IT

Integrating STEM in K-12 Classrooms

Conferences

Classroom Kits



Biology

Summer 2024

Course	Overview	Description	Related Courses by Institution
BIO 633 Adv. Pathophysiology Indiana State University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	BIO 508 General Immunology (W/S 24) BIO 554 Animal Behavior (W/S 25) BIO 580 General Evolution (FA 24) BIO 581 Genome Science (FA 23) BIO 633 Advanced Pathophysiology (SU 24) BIO 691 Anatomical Dissection - Tentative (SU I 25) -
BIOL 505 Human Physiology Indiana Wesleyan University Summer I	Location: Online Format: Asynch Graduate Credits: 3	This course utilizes a systems approach in the exploration of the concept of homeostasis, or the ability of the body systems to work together to maintain internal stability. Knowledge of basic chemistry and cell biology is recommended.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 506 Microbiology Indiana Wesleyan University Summer II	Location: Online Format: Asynch Graduate Credits: 3	This course examines the structure, physiology, and activities of pathogenic and non-pathogenic microorganisms. Emphasis is placed on the interaction of microorganisms with each other, their hosts, and the environment. Course activities will apply principles of microbiology to public health, biotechnology, environmental science, and industrial processes.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)

[Back to Table of Contents](#)

Chemistry

Summer 2024

Course	Overview	Description	Related Courses by Institution
<p>CHEM 590 Chemistry Capstone Indiana University <i>Full Semester</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>The goal of this course is for students to be able to synthesize what they have learned in previous coursework from two or more subdisciplines of chemistry (analytical, inorganic, organic, physical, biological) as well as what they learn from the chemical literature to develop a learning module that introduces novel concepts and applications to introductory chemistry students. Students will integrate their knowledge and understanding from literature that transcends subdisciplinary boundaries of chemistry.</p>	<p>CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24)</p> <p>Please note: Additional offerings to be determined.</p>

[Back to Table of Contents](#)

Computer Science

Summer 2024

Course	Overview	Description	Related Courses by Institution
<p>CS 647 Cybersecurity Ball State University Full Semester <i>*Cohort 1*</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Coming Soon</p>	<p>Cohort 1 - Summer I 2023: CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (FA 24) - CS 617 Intro to Programming (FA 23) CS 621 Data Analytics - Prerequisite: CS 617 (W/S 24) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (Wi/S 25) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (SU 24) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (SU 25) -</p> <p>Cohort 2 - TBD CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (TBD) - CS 617 Intro to Programming (TBD) CS 621 Data Analytics - Prerequisite: CS 617 (TBD) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (TBD) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (TBD) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (TBD) -</p>

[Back to Table of Contents](#)

IT

Summer 2024

Course	Overview	Description	Related Courses by Institution
IT 533 Data Mining & Apps Valparaiso University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	Data Mining is a broad area that integrates techniques from several fields including machine learning, statistics, pattern recognition, artificial intelligence, and database systems, for the analysis of large volumes of data. This course gives a wide exposition of these techniques and their software tools. Prerequisite Course: IT-502	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)
IT 603 Information Management Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	The conceptual framework of algebra, recent developments in algebraic theory and advanced topics in algebra for teachers and curriculum supervisors.	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)

[Back to Table of Contents](#)

Math

Summer 2024

Course	Overview	Description	Related Courses by Institution
MATH 520 Number Theory University of Indianapolis <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Number theory is the study of properties and relationships of numbers, especially the positive integers. Topics in elementary number theory include divisibility properties of integers, properties of primes, congruences, quadratic reciprocity, and integer solutions to basic equations (e.g. Diophantine equations). Even though number theory is one of the oldest disciplines in mathematics,	MATH 510 Applied Statistical Methods (SU 25) MATH 520 Number Theory (SU 24) MATH 530 Abstract Algebra (FA 23) MATH 540 Modern Geometries (W/S 24 & 25) MATH 550 Mathematical Analysis (FA 24)
MATH 505 Statistical Methods Indiana Wesleyan University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This applied statistics course presents a variety of statistical topics in the context of real world data. The goal of this course is to demonstrate the broad applicability of advanced statistical techniques. Topics include probability, inferences for one and two sample means, inferences for more than two sample means, inferences for one and two sample proportions, multiple- comparison procedures, and nonparametric methods.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 506 Modern Geometry Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course offers a critical presentation of the development and philosophical significance of non-Euclidean geometry. The goal of this course is to advance understanding of Euclidean and non-Euclidean geometries, through analytic methods and critical thinking.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 638 Models of Stat Inference University of Southern IN <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	This is a 3-credit course in Statistics that develops the theoretical background of statistical inference including applications. This course emphasizes the study of probability models that form the basis of standard statistical techniques. Statistical techniques considered include inferences involving measures of central tendency and measures of variability. Maximum likelihood estimates, interval estimates and hypothesis testing are among these.	MATH 603 Fund Concepts of Algebra (W/S 25) MATH 604 Fund of Geometry (SU II 25) MATH 605 Problem Solving In Math (W/S 24) MATH 621 Tech for Teaching Math (FA 24) MATH 641 Number Theory (FA 23) STAT 638 Models of Stat Inference (SU II 24)

[Back to Table of Contents](#)

Physics

Summer 2024

Course	Overview	Description	Related Courses by Institution
<p>PHYS 502 Classical Mechanics Indiana Wesleyan University <i>Summer I</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course develops a mathematical foundation to succeed in graduate level courses in classical mechanics, electrodynamics, thermodynamics/statistical physics, and modern and quantum physics.</p>	<p>PHYS 501 Mathematical Methods (W/S II 24) PHYS 502 Classical Mechanics (SU I 24) PHYS 503 Electromagnetism (SU II 24) PHYS 504 Intro- Quan Mechanics (FA I24) PHYS 505 Quantum Mechanics II (FA II 24) PHYS 506 Thermodynamics (W/S I 25)</p>
<p>PHYS 503 Electromagnetism Indiana Wesleyan University <i>Summer II</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This theoretical and problem-solving course focuses on the development and application of the integral and differential forms of Maxwell's equations from phenomenological observations, culmination in the electromagnetic wave equations.</p>	<p>PHYS 501 Mathematical Methods (W/S II 24) PHYS 502 Classical Mechanics (SU I 24) PHYS 503 Electromagnetism (SU II 24) PHYS 504 Intro- Quan Mechanics (FA I24) PHYS 505 Quantum Mechanics II (FA II 24) PHYS 506 Thermodynamics (W/S I 25)</p>

[Back to Table of Contents](#)

Psychology

Summer 2024

Course	Overview	Description	Related Courses by Institution
MPSY 5400 Counseling Psychology Indiana Tech <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is intended to be an examination of the main forces of psychotherapy. Several major theories used to understand human thoughts, feelings and behaviors within the main forces of psychotherapy will be explored.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -
MPSY 6200 Social Psychology Indiana Tech <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is designed to explore topics within social psychology in depth through the use of empirical journal articles as well as texts. Students will be provided an opportunity to develop deeper knowledge of many of the major studies within the field of social psychology. Students will be encouraged to form connections between course material and their own experiences as social psychology topics are issues that occur in our everyday lives.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -
MPSY 5050 Writing in Psychology Indiana Tech <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	The development of graduate level writing, reading, critical thinking and literature search skills will be emphasized. The course will focus on how to interpret, synthesize, and draw conclusions about psychological research and create a coherent review of the literature. A review of American Psychological Association (APA) style documentation for experimental reports and literature reviews will also be covered.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -

[Back to Table of Contents](#)

Psychology

Summer 2024

Course	Overview	Description	Related Courses by Institution
MPSY 5600 Stats-Behavioral Sciences Indiana Tech <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is a survey of the statistical techniques commonly used in psychological research including such topics as correlation, linear regression, t-tests, ANOVA and Chi Squares. Introduction to a computer-based statistical software package will be presented given the computation intensive nature of these techniques.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -

[Back to Table of Contents](#)

Technology

Summer 2024

Course	Overview	Description	Related Courses by Institution
TECH 505 Web Design Indiana Wesleyan University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course introduces the student to the fundamentals of web design, the concepts of user interface, the application of usability studies, basic HTML coding, and the use of web design applications. Attention will also be given to the creation, capture, and editing of various media for web delivery.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.
TECH 506 Data Utilization Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	Data utilization and evaluation covers basic to intermediate statistical methods in education and psychology. It prepares educators to appropriately describe, select, apply, calculate, and interpret statistical methods, in preparation for making evidence-based decisions.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Summer 2024

Course	Overview	Description	Related Courses by Institution
EDCI 53900 Tech Design Purdue University <i>Summer I</i> *Cohort 2*	Location: Online Format: Asynch Graduate Credits: 3	This course will provide students with a conceptual understanding of integrated K-12 Science, Technology, Engineering, & Mathematics (STEM) education and the nature of the disciplines of STEM. Students will explore implications of integrated approaches to STEM, national teaching standards and current research.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDCI 55850 Engineering Design Purdue University <i>Summer II</i> *Cohort 2*	Location: Online Format: Asynch Graduate Credits: 3	Engineering and technology design has gained considerable traction in many K-12 schools. In this course, we will examine principles of engineering design and technology as well as where and how engineering and technology design best fits in a K-12 integrated STEM curriculum. Course participants will engage in authentic engineering and technology design experiences. Course participants will also design, develop, and deliver integrated lessons that help K-12 students develop the knowledge, skills, and practices of engineering and technology design.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDUC 654 Designing a PBL Unit University of Indianapolis <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	Participants will design and implement a project-based learning unit in a STEM-related field to engage their elementary and secondary students in deeper learning. We explore the nuts and bolts of designing an effective PBL unit, while ensuring the Indiana Standards are the cornerstones to the unit. We investigate research-based practices of implementing high quality PBL. Participants will be introduced to the theory and practice of project-based learning (PBL).	EDUC 654 Designing PBL Unit (SU I 24 & S25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W.S 24 & WS 25)

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Summer 2024

Course	Overview	Description	Related Courses by Institution
EDUC 655 STEM Methods University of Indianapolis <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	STEM methods is a course designed to highlight elements of STEM and how to incorporate them into the classroom. After completing this STEM methods course, teachers will have a better understanding of creating a STEM culture in the classroom and have STEM activities in their toolbox to implement.	EDUC 654 Designing PBL Unit (SU I 24 & S25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integrating Tech into STEM (W.S 24)

[Back to Table of Contents](#)

Conferences

Summer 2024

Course	Overview	Description
TBA	Location: TBA Date: TBA Time: TBA Teacher Level: K-12	TBD

[Back to Table of Contents](#)

Classroom Kits

Summer 2024

Course	Overview	Description
TBA	Location: Online Teacher Level: K - 5	Coming Soon
TBA	Location: Online Teacher Level: 6 - 8	Coming Soon
TBA	Location: Online Teacher Level: 9 - 12	Coming Soon

[Back to Table of Contents](#)

Fall 2024 Courses

Full Semester, Fall I, and Fall II

Biology

Chemistry

Computer Science

IT

Mathematics

Physics

Psychology

Technology/IT

Integrating STEM in K-12 Classrooms

Conferences

Classroom Kits



Biology

Fall 2024

Course	Overview	Description	Related Courses by Institution
BIO 580 General Evolution Indiana State University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	This class addresses major themes in biological evolution. These themes—including the history of evolution, evolutionary processes, adaptation, and evolution as an explanatory framework—at levels of biological organization ranging from genomes to ecological communities. On Human Evolution and Evolution and Society are included.	BIO 508 General Immunology (W/S 24) BIO 554 Animal Behavior (W/S 25) BIO 580 General Evolution (FA 24) BIO 581 Genome Science (FA 23) BIO 633 Advanced Pathophysiology (SU 24) BIO 691 Anatomical Dissection - Tentative (SU I 25) -
BIOL 501 Genome Science Indiana Wesleyan University Fall I	Location: Online Format: Asynch Graduate Credits: 3	This course provides an intermediate understanding of chemical principles in biology and focuses on the study of proteins, carbohydrates, lipids, and nucleic acids in a biological context. Enzymes, metabolism, and gene expression are also investigated.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 502 Cell Biology Indiana Wesleyan University Fall II	Location: Online Format: Asynch Graduate Credits: 3	This course provides an intermediate understanding of chemical principles in biology and focuses on the study of proteins, carbohydrates, lipids, and nucleic acids in a biological context. Enzymes, metabolism, and gene expression are also investigated.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)

[Back to Table of Contents](#)

Chemistry

Fall 2024

Course	Overview	Description	Related Courses by Institution
CHEM TBA Indiana University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24) Please note: Addiitonal offerings to be determined.
CHEM TBA Indiana University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24) Please note: Addiitonal offerings to be determined.

[Back to Table of Contents](#)

Computer Science

Fall 2024

Course	Overview	Description	Related Courses by Institution
<p>CS 602 Discrete Structure Ball State University <i>Full Semester</i> *Cohort 1*</p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Coming Soon</p>	<p>Cohort 1 - Summer I 2023: CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (FA 24) - CS 617 Intro to Programming (FA 23) CS 621 Data Analytics - Prerequisite: CS 617 (W/S 24) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (Wi/S 25) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (SU 24) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (SU 25) -</p> <p>Cohort 2 - TBD CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (TBD) - CS 617 Intro to Programming (TBD) CS 621 Data Analytics - Prerequisite: CS 617 (TBD) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (TBD) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (TBD) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (TBD) -</p>

[Back to Table of Contents](#)

IT

Fall 2024

Course	Overview	Description	Related Courses by Institution
IT 600 Ethics -Info Technology Valparaiso University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is designed to introduce the scholar to concepts of Philosophy relative to Ethics and apply those concepts to the field of information technology. Upon completion of this course the scholar will gain knowledge and understanding of the basic concepts of Philosophy relative to ethics, the value of intellectual property (IP), the importance and significance of professional responsibility, the importance of personal identity and privacy, the difference between ethical and legal, sources of a "code of ethics", the concepts of theft and piracy, power concerns, and the significance of robotics, algorithms, fuzzy logic and artificial intelligence.	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)

[Back to Table of Contents](#)

Math

Fall 2024

Course	Overview	Description	Related Courses by Institution
MATH 550 Mathematical Analysis University of Indianapolis <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 4	This course focuses on the theoretical foundations of the calculus sequence and consists essentially of an advanced treatment of the concepts of limits, differentiation and integration, both in the univariate and in the multivariate settings. Topics include higher order partial derivatives, generalizations of the mean value theorem and the fundamental theorem of calculus, evaluation of multiple integrals using the change of variables method, line integrals, implicit functions and the implicit function theorem.	MATH 510 Applied Statistical Methods (SU 25) MATH 520 Number Theory (SU 24) MATH 530 Abstract Algebra (FA 23) MATH 540 Modern Geometries (W/S 24 & 25) MATH 550 Mathematical Analysis (FA 24)
MATH 621 Tech for Teaching Math University of Southern IN <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	The course prepares mathematics teachers to use technology to make instructional decisions and support students in solving mathematical problems in the secondary mathematics curriculum, including problems in geometry, algebra, functions, data analysis, probability, and calculus.	MATH 603 Fund Concepts of Algebra (W/S 25) MATH 604 Fund of Geometry (SU II 25) MATH 605 Problem Solving In Math (W/S 24) MATH 621 Tech for Teaching Math (FA 24) MATH 641 Number Theory (FA 23) STAT 638 Models of Stat Inference (SU II 24)
MATH 501 Linear Algebra Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course offers an intermediate treatment of the theory and application of linear algebra. The goal of this course is to provide a framework for applying linear algebra to a variety of mathematical problems. Topics include vector spaces, linear transformations, diagonalization, inner product spaces, Markov Chains, and the Jordan canonical form. There is an emphasis on understanding and writing proofs.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 502 Abstract Algebra Indiana Wesleyan University <i>Fall II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is a study of algebraic structures and major theorems for these. Group theory and ring theory are reviewed and further developments are presented. An introduction to field theory and Galois theory is included.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)

[Back to Table of Contents](#)

Physics

Fall 2024

Course	Overview	Description	Related Courses by Institution
<p>PHYS 504 Quantum Physics Indiana Wesleyan University <i>Fall I</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course reviews special relativity and provides an introduction to quantum mechanics. It covers applications in nuclear and particle physics and develops key aspects of quantum theory via various extensions of the Stern-Gerlach experiment.</p>	<p>PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)</p>
<p>PHYS 505 Quantum Mechanics II Indiana Wesleyan University <i>Fall II</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Builds on the foundation laid in PHY 504, considering more advanced topics in spin systems and continuing on to the wave mechanics formulation of quantum mechanics. Various problems in one and three dimensions, along with some introductory topics in quantum field theory will be covered.</p>	<p>PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)</p>

[Back to Table of Contents](#)

Psychology

Fall 2024

Course	Overview	Description	Related Courses by Institution
<p>MPSY 6600 Research Methods-Psych Indiana Tech Fall I</p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This course is an overview of the research methods and techniques used within the field of psychology. The focus of the course will be on the evaluation of research methodology as well as the examination of the process involved in designing a research project.</p> <p>Prerequisite Course: MPSY 5600</p>	<p>MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -</p>
<p>MPSY 6920 Capstone Course Indiana Tech Fall II</p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>This capstone course is designed to assess the student's knowledge gained throughout the entire Master of Science in psychology program. The course will consist of a comprehensive exam that will be composed of various components directly related to the program learning outcomes and the courses completed within the degree program.</p> <p>Prerequisite: ALL MS Psychology courses completed.</p>	<p>MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) - -</p>

[Back to Table of Contents](#)

Technology

Fall 2024

Course	Overview	Description	Related Courses by Institution
TECH 501 Digital Media Indiana Wesleyan University <i>Fall I</i>	Location: Online Format: Asynch Graduate Credits: 3	An exploration of Richard E. Mayer's multimedia learning principles for the design of digital media including images, video, audio, and text-based presentations. Learners will apply these principles as they gain competency with various software applications to deliver instruction.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.
TECH 502 Digital Content Indiana Wesleyan University <i>Fall II</i>	Location: Online Format: Asynch Graduate Credits: 3	An exploration of the varied definitions and criteria for digital literacy and digital citizenship. From the context of first and second level digital divides, learners will gain an understanding of the concepts that are critical to the development of programs, tools, and resources designed to create a generation of digitally literate citizens.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Fall 2024

Course	Overview	Description	Related Courses by Institution
EDCI 55490 Assessment in STEM Purdue University <i>Fall II</i> *Cohort 2*	Location: Online Format: Asynch Graduate Credits: 3	This course is designed to help teachers of mathematics recognize the link between productive assessment and productive instruction, using the mathematics education standards for teacher competence in educational assessment. This course is designed to help teachers meet those professional standards and understand the public pressure as well as instructional need for effective formative and summative assessment.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDUC 656 Teacher Engineering Ed University of Indianapolis <i>Fall II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is designed for K-12 teachers who seek to understand the need to build more engineering capacity in K-12 education, expand practice by integrating engineering principles & projects into content areas, and design experiences through an inclusive and accessible lens. Teachers will be introduced to multimodal composition and inclusive design to create more accessible books, games, and classroom materials. Modules are designed to enable teachers to flexibly apply the projects in their classrooms or other formal/informal contexts. The modules will range from the use of physical computing devices to the design of cranky cardboard contraptions. A service learning/community-based project will serve as a capstone experience.	EDUC 654 Designing PBL Unit (SU I 24 & 25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W/S 24 & 25)

[Back to Table of Contents](#)

Conferences

Fall 2024

Course	Overview	Description
TBA	Location: TBA Date: TBA Time: TBA Teacher Level: K-12	Coming Soon

[Back to Table of Contents](#)

Classroom Kits

Fall 2024

Course	Overview	Description
TBA	Location: Online Teacher Level: K- 5	Coming Soon
TBA	Location: Online Teacher Level: 6 - 8	Coming Soon
TBA	Location: Online Teacher Level: 9 - 12	Coming Soon

[Back to Table of Contents](#)

Winter/Spring 2025 Courses

Full Semester, W/S I, and W/S II

Biology

Chemistry

Computer Science

IT

Mathematics

Physics

Psychology

Technology/IT

Integrating STEM in K-12 Classrooms

Conferences

Classroom Kits



Biology

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
BIO 554 Animal Behavior Indiana State University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	BIO 508 General Immunology (W/S 24) BIO 554 Animal Behavior (W/S 25) BIO 580 General Evolution (FA 24) BIO 581 Genome Science (FA 23) BIO 633 Advanced Pathophysiology (SU 24) BIO 691 Anatomical Dissection - Tentative (SU I 25) -
BIOL 503 Systems Biology Indiana Wesleyan University Winter/Spring I	Location: Online Format: Asynch Graduate Credits: 3	This course investigates the major principles and concepts of biological systems, including the fundamentals of mathematical and physiological modeling, a detailed analysis of gene, protein, and metabolic systems, as well as the application of systems biology in health and medicine.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 504 Genetics Indiana Wesleyan University Winter/Spring II	Location: Online Format: Asynch Graduate Credits: 3	This course integrates basic principles of genetics in eukaryotes and prokaryotes at the level of molecules, cells, and multi-cellular organisms including humans. Also covered are Mendelian genetics, the molecular basis of gene function as well as mutation, transmission systems, population, and evolutionary genetics. Subtopics also include the structure and function of chromosomes and genomes along with biological variation resulting from recombination, mutation, and selection.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)

[Back to Table of Contents](#)

Chemistry

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
CHEM TBD Indiana University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24) Please note: Additional offerings to be determined.
CHEM TBD Indiana University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24) Please note: Additional offerings to be determined.

[Back to Table of Contents](#)

Computer Science

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
<p>CS 636 Modern Database System Ball State University <i>Full Semester</i> <i>*Cohort 1*</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>Coming Soon</p>	<p>Cohort 1 - Summer I 2023: CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (FA 24) - CS 617 Intro to Programming (FA 23) CS 621 Data Analytics - Prerequisite: CS 617 (W/S 24) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (Wi/S 25) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (SU 24) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (SU 25) -</p> <p>Cohort 2 - TBD CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (TBD) - CS 617 Intro to Programming (TBD) CS 621 Data Analytics - Prerequisite: CS 617 (TBD) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (TBD) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (TBD) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (TBD) -</p>

[Back to Table of Contents](#)

IT

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
IT 604 Project Management Valparaiso University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)

[Back to Table of Contents](#)

Math

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
MATH 540 Modern Geometries University of Indianapolis <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 4	A review of the basic techniques of straight edge and compass construction, including constructions requiring propositions from Book III of Euclid's Elements (ca. 300 BC), gives students an intuitive foundation necessary for the approaches that follow.	MATH 510 Applied Statistical Methods (SU 25) MATH 520 Number Theory (SU 24) MATH 530 Abstract Algebra (FA 23) MATH 540 Modern Geometries (W/S 24 & 25) MATH 550 Mathematical Analysis (FA 24)
MATH 605 Problem Solving in Math University of Southern IN <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Theory and practice in mathematical problem-solving; exploration of a variety of techniques; and finding solutions to problems in arithmetic, algebra, geometry, and other mathematics for teachers of mathematics and curriculum supervisors.	MATH 603 Fund Concepts of Algebra (W/S 25) MATH 604 Fund of Geometry (SU II 25) MATH 605 Problem Solving In Math (W/S 24) MATH 621 Tech for Teaching Math (FA 24) MATH 641 Number Theory (FA 23) STAT 638 Models of Stat Inference (SU II 24)
MATH 503 Advanced Calculus Indiana Wesleyan University <i>Winter/Spring I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is an advanced multivariate treatment of calculus for the mature student of mathematics. Course content will include advanced treatment of differentiation and integration as well as advanced topics including Fourier Series and special functions.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 504 Real Analysis Indiana Wesleyan University <i>Winter/Spring II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course offers a rigorous study of the real numbers and associated functions in order to deepen students' understanding of calculus and raise their ability to effectively formulate and communicate mathematics. It reviews concepts of real-valued functions defined on the real line and proceeds to extend these results as applicable to complex valued functions and metric spaces. It also includes a rigorous examination of properties of some important special functions.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)

[Back to Table of Contents](#)

Physics

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
<p>PHYS 506 Thermodynamics Indiana Wesleyan University <i>Winter/Spring I</i></p>	<p>Location: Online Format: Asynch Graduate Credits: 3</p>	<p>The laws of thermodynamics from macroscopic observations and then demonstrates how they arise from the statistical, collective behavior of atoms and molecules; the statistical development encompasses classical systems (kinetic theory, transport phenomena, and ensemble theory) and quantum systems (systems of bosons and fermions).</p>	<p>PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)</p>

[Back to Table of Contents](#)

Psychology

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
MPSY 5200 Lifespan Development Indiana Tech <i>Winter/Spring I</i>	Location: Online Format: Asynch Graduate Credits: 3	The focus of this course will be to survey the cognitive, psychological, moral, social, emotional, physical and spiritual development of humans throughout the lifespan from birth to death. A developmental framework for understanding issues that impact normal development will be studied.	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -
MPSY 6600 Research Methods Indiana Tech <i>Winter/Spring II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course is an overview of the research methods and techniques used within the field of psychology. The focus of the course will be on the evaluation of research methodology as well as the examination of the process involved in designing a research project. Prerequisite Course: MPSY 5600	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -

[Back to Table of Contents](#)

Technology

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
TECH 503 Instr Design Theory Indiana Wesleyan University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	The course introduces instructional design principles and practices to the development of learning opportunities in face to face, online, and blended modalities. Particular attention will be focused on the process of aligning learning outcomes with instructional strategies, assessments, and effective use of technology-based learning activities.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.
TECH 504 Tech - Learning Comm Indiana Wesleyan University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	An exploration of the varied ways in which digital technology can serve a valuable role in the creation and maintenance of learning communities, in the collection of data, in communication with stakeholders, and in the facilitation of personal and institutional change.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Winter/Spring 2025

Course	Overview	Description	Related Courses by Institution
EDCI 55950 Tech Design Purdue University <i>Winter/Spring I</i> *Cohort 2*	Location: Online Format: Asynch Graduate Credits: 3	Engineering and technology design has gained considerable traction in many K-12 schools. In this course, we will examine principals of engineering design and technology as well as where and how engineering and technology design best fits in a K-12 integrated STEM curriculum. Course participants will engage in authentic engineering and technology design experiences. Course participants will also design, develop, deliver integrated lessons that help K-12 students develop the knowledge, skills, and practices of engineering and technology design.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDCI 55800 Engineering Design Purdue University <i>Winter/Spring II</i> *Cohort 2*	Location: Online Format: Asynch Graduate Credits: 3	This course invites students to explore the complimentary concepts of identity and culture in order to foster an ethical educational disposition and practice in regards to people unlike ourselves. We will explore the concepts of race, gender, sexuality, nationality, belief, and ability as elements that comprise culture – and in doing so to develop critical questions around our own identities, perceptions of others, and roles as educators.	Cohort 1 - Summer I 2023: EDCI 53900 Intro to Integrated STEM (SU I 23) EDCI 55950 Engineering Design (SU II 23) EDCI 54900 Assessment in STEM (FA II 23) EDCI 55850 Tech Design - STEM Ed (W/S I 24) EDCI 55800 Integ STEM Methods (W/S II 24) Cohort 2 - Summer I 2024: EDCI 53900 Intro to Integrated STEM (SU I 24) EDCI 55950 Engineering Design (SU II 24) EDCI 54900 Assessment in STEM (FA II 24) EDCI 55850 Tech Design STEM Ed (W/S I 25) EDCI 55800 Integ STEM Methods (W/S II 25)
EDUC 653 Integrating Tech - STEM University of Indianapolis <i>Winter/Spring I</i>	Location: Online Format: Asynch Graduate Credits: 3	Technology supports teachers in their efforts to empower and engage students. Modules are designed to help participants interact with different roles that technology plays in STEM education: 1) technology as educational/instructional technology, 2) technology as coding or computational thinking; and 3) content-specific technology as tools and practices used by science, mathematics, and engineering practitioners. In each module, participants will not only explore new technologies as learners, but also design learning materials/activities that integrate those new technologies.	EDUC 654 Designing PBL Unit (SU I 24 & 25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W/S 24 & 25)

[Back to Table of Contents](#)

Conferences

Winter/Spring 2025

Course	Overview	Description
Indiana STEM Education Conference	Location: TBA Date: TBA Time: TBA Teacher Level: K - 12	TBD
HASTI & ICTM Conference	Location: TBA Date: TBA Time: TBA Teacher Level: K - 12	TBD

[Back to Table of Contents](#)

Classroom Kits

Winter/Spring 2025

Course	Overview	Description
TBA	Location: Online Teacher Level: K- 5	Coming Soon
TBA	Location: Online Teacher Level: 6 - 8	Coming Soon
TBA	Location: Online Teacher Level: 9 - 12	Coming Soon

[Back to Table of Contents](#)

Summer 2025 Courses

Full Semester, Summer I, and Summer II

Biology

Chemistry

Computer Science

IT

Mathematics

Physics

Psychology

Technology/IT

Integrating STEM in K-12 Classrooms

Conferences

Classroom Kits



Biology

Summer 2025

Course	Overview	Description	Related Courses by Institution
BIO 691 Anatomical Dissection Indiana State University <i>Summer I - Tentative</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	BIO 508 General Immunology (W/S 24) BIO 554 Animal Behavior (W/S 25) BIO 580 General Evolution (FA 24) BIO 581 Genome Science (FA 23) BIO 633 Advanced Pathophysiology (SU 24) BIO 691 Anatomical Dissection - Tentative (SU I 25) -
BIOL 505 Human Physiology Indiana Wesleyan University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course utilizes a systems approach in the exploration of the concept of homeostasis, or the ability of the body systems to work together to maintain internal stability. Knowledge of basic chemistry and cell biology is recommended.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)
BIOL 506 Microbiology Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course examines the structure, physiology, and activities of pathogenic and non-pathogenic microorganisms. Emphasis is placed on the interaction of microorganisms with each other, their hosts, and the environment. Course activities will apply principles of microbiology to public health, biotechnology, environmental science, and industrial processes.	BIOL 501 Biological Chemistry (FA I 23 & 24) BIOL 502 Cell Biology (FA II 23 & 24) BIOL 503 Systems Biology (W/S I 24 & 25) BIOL 504 Genetics (W/S II 25) BIOL 505 Human Physiology (SU I 24 & 25) BIOL 506 Microbiology (SU II 24 & 25)

[Back to Table of Contents](#)

Chemistry

Summer 2025

Course	Overview	Description	Related Courses by Institution
CHEM TBA Indiana University <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	CHEM T 510 Inorganic Chemistry (W/S 24) CHEM T 520 Organic Synthesis (W/S 23) CHEM T 530 Organic Spectroscopy (FA 23) CHEM T 540 Physical Chemistry (FA 23) CHEM T 550 Introductory Biochem (W/S 24) CHEM T 560 Environmental Chemistry (TBD) CHEM T 590 Chemistry Capstone (SU 24) Please note: Additional offerings to be determined.

[Back to Table of Contents](#)

Computer Science

Summer 2025

Course	Overview	Description	Related Courses by Institution
CS 690 Software Engineering Ball State University <i>Full Semester</i> *Cohort 1*	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	Cohort 1 - Summer I 2023: CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (FA 24) - CS 617 Intro to Programming (FA 23) CS 621 Data Analytics - Prerequisite: CS 617 (W/S 24) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (Wi/S 25) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (SU 24) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (SU 25) - Cohort 2 - TBD CS 602 Discrete Structure & Algorithms - Prerequisite: CS 617 (TBD) - CS 617 Intro to Programming (TBD) CS 621 Data Analytics - Prerequisite: CS 617 (TBD) - CS 636 Modern Database Systems w/ Apps - Prerequisite: CS 617 (TBD) - CS 647 Cybersecurity & Software Design - Prerequisites: CS 617 & CS 602 (TBD) - CS 690 Software Engineering - Prerequisites: CS 617 & CS 602 (TBD) -

[Back to Table of Contents](#)

IT

Summer 2025

Course	Overview	Description	Related Courses by Institution
IT 533 Data Mining & Apps Valparaiso University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	Data Mining is a broad area that integrates techniques from several fields including machine learning, statistics, pattern recognition, artificial intelligence, and database systems, for the analysis of large volumes of data. This course gives a wide exposition of these techniques and their software tools. Prerequisite: IT-502 Introduction to Programming	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)
IT 603 Information Management Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	The conceptual framework of algebra, recent developments in algebraic theory and advanced topics in algebra for teachers and curriculum supervisors.	IT 502 Introduction to Programming (W/S 24) IT 510 Intro to Information Technology (FA 23) IT 533 Data Mining & Applications (SU I 24) IT 600 Ethics - Information Technology (FA 24) IT 603 Information Management (SU I 24) IT 604 Project Management (W/S 25)

[Back to Table of Contents](#)

Math

Summer 2025

Course	Overview	Description	Related Courses by Institution
MATH 510 Applied Stat. Methods University of Indianapolis <i>Full Semester</i>	Location: Online Format: Asynch Graduate Credits: 3	This course presents various statistical methods that are useful to students and professionals in the Life Sciences. Topics include estimation and hypothesis testing, analysis of variance and covariance, simple and multiple regression techniques, logistic regression, count data analysis, and nonparametric methods.	MATH 510 Applied Statistical Methods (SU 25) MATH 520 Number Theory (SU 24) MATH 530 Abstract Algebra (FA 23) MATH 540 Modern Geometries (W/S 24 & 25) MATH 550 Mathematical Analysis (FA 24)
MATH 505 Statistical Methods Indiana Wesleyan University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This applied statistics course presents a variety of statistical topics in the context of real world data. The goal of this course is to demonstrate the broad applicability of advanced statistical techniques. Topics include probability, inferences for one and two sample means, inferences for more than two sample means, inferences for one and two sample proportions, multiple- comparison procedures, and nonparametric methods.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24))
MATH 506 Modern Geometry Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course offers a critical presentation of the development and philosophical significance of non-Euclidean geometry. The goal of this course is to advance understanding of Euclidean and non-Euclidean geometries, through analytic methods and critical thinking.	Math 501 Linear Algebra (FA I 23) Math 502 Abstract Algebra (FA II 23) Math 503 Advanced Calculus (W/S I 24) Math 504 Real Analysis (W/S II 24) Math 505 Stat Methods I (FA I 23 & SU I 24) Math 506 Modern Geometry (SU II 24)
MATH 604 Fund of Geometry University of Southern IN <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	This course provides the conceptual framework of many different geometries, covers recent developments in geometric theory, and advanced topics in geometry for teachers and curriculum supervisors.	MATH 603 Fund Concepts of Algebra (W/S 25) MATH 604 Fund of Geometry (SU II 25) MATH 605 Problem Solving In Math (W/S 24) MATH 621 Tech for Teaching Math (FA 24) MATH 641 Number Theory (FA 23) STAT 638 Models of Stat Inference (SU II 24)

[Back to Table of Contents](#)

Physics

Summer 2025

Course	Overview	Description	Related Courses by Institution
PHYS TBD Indiana Wesleyan University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)
PHYS TBD Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	PHYS 501 Mathematical Methods (W/S I 23) PHYS 502 Classical Mechanics (W/S II 23) PHYS 503 Electromagnetism (SU I 23) PHYS 504 Intro- Quan Mechanics (SU II 23) PHYS 505 Quantum Mechanics II (FA I 23) PHYS 506 Thermodynamics (FA II 23)

[Back to Table of Contents](#)

Psychology

Summer 2025

Course	Overview	Description	Related Courses by Institution
MPSY TBD Indiana Tech <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -
MPSY TBD Indiana Tech <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	Coming Soon	MPSY 5050 Writing in Psychology (SU 24) MPSY 5100 Multicultural Psychology (FA 23) MPSY 5200 Lifespan Development (W/S II 25) MPSY 5400 Adv Counseling Theory (SU I 24) MPSY 5600 Stats for Behavioral Sciences - Master's track only (SU II 24) - MPSY 5800 Legal & Ethical Issues (W/S II 24) MPSY 6000 Psychopathology (FA II 23) MPSY 6200 Advanced Social Psych (SU I 24) MPSY 6600 Research Methods in Psychology - Prereq: MPSY 5600 (FA I 24 & W/S II 25) - MPSY 6800 Advanced Biopsych (W/S I 24) MPSY 6920 Capstone Course - Master of Science in Psych (FA II 24) -

[Back to Table of Contents](#)

Technology

Summer 2025

Course	Overview	Description	Related Courses by Institution
TECH 505 Web Design Indiana Wesleyan University <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	This course introduces the student to the fundamentals of web design, the concepts of user interface, the application of usability studies, basic HTML coding, and the use of web design applications. Attention will also be given to the creation, capture, and editing of various media for web delivery.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.
TECH 506 Data Utilization Indiana Wesleyan University <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	Data utilization and evaluation covers basic to intermediate statistical methods in education and psychology. It prepares educators to appropriately describe, select, apply, calculate, and interpret statistical methods, in preparation for making evidence-based decisions.	TECH 501 Digital Media (FA I 23 & 24) TECH 502 Digital Content (FA II 24) TECH 503 Inst Design Theory (W/S I 24 & 25) TECH 504 Tech - Learn Comm (W/S II 24 & 25) TECH 505 Web Design (SU I 24 & 25) TECH 506 Data Utili & Eval (SU II 24 & 25) Please Note: The courses in this sequence are tentatively schedule for the above terms.

[Back to Table of Contents](#)

Integrating STEM in K-12 Classrooms

Summer 2025

Course	Overview	Description	Related Courses by Institution
EDUC 654 Designing a PBL Unit University of Indianapolis <i>Summer I</i>	Location: Online Format: Asynch Graduate Credits: 3	Participants will design and implement a project-based learning unit in a STEM-related field to engage their elementary and secondary students in deeper learning. We explore the nuts and bolts of designing an effective PBL unit, while ensuring the Indiana Standards are the cornerstones to the unit. We investigate research-based practices of implementing high quality PBL. Participants will be introduced to the theory and practice of project-based learning (PBL).	EDUC 654 Designing PBL Unit (SU I 24 & S25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W.S 24 & WS 25)
EDUC 655 STEM Methods University of Indianapolis <i>Summer II</i>	Location: Online Format: Asynch Graduate Credits: 3	STEM methods is a course designed to highlight elements of STEM and how to incorporate them into the classroom. After completing this STEM methods course, teachers will have a better understanding of creating a STEM culture in the classroom and have STEM activities in their toolbox to implement.	EDUC 654 Designing PBL Unit (SU I 24 & 25) EDUC 655 STEM Methods (SU II 24 & 25) EDUC 656 Universal Design (FA II 23 & 24) EDUC 653 Integ Tech STEM (W/S 24 & 25)

[Back to Table of Contents](#)

Conferences

Summer 2025

Course	Overview	Description
TBA	Location: TBA Date: TBA Time: TBA Teacher Level: K-12	TBD

[Back to Table of Contents](#)

Classroom Kits

Summer 2025

Course	Overview	Description
TBA	Location: Online Teacher Level: K - 5	Coming Soon
TBA	Location: Online Teacher Level: 6 - 8	Coming Soon
TBA	Location: Online Teacher Level: 9 - 12	Coming Soon

[Back to Table of Contents](#)

End of Document - This page intentionally left blank