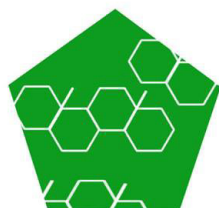


# HOOOSIER

# STEM

SCIENCE  
TECHNOLOGY  
ENGINEERING  
MATHEMATICS

# ACADEMY



## Course Catalogue Ball State University Summer 2023



BALL STATE  
UNIVERSITY

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## About the Hoosier STEM Academy

The Hoosier STEM Academy is a partnership among Ball State University, IUPUI, and Purdue University to provide graduate-level STEM courses for current Indiana STEM teachers who wish to be credentialed to teach dual credit courses. Courses are designed specifically to meet the needs of Indiana high school teachers, including courses that use online, blended, and/or distance education instructional designs, as well as traditional face-to-face options. STEM teachers who wish to participate must currently teach in

underserved Indiana school corporations and Indiana schools experiencing a shortage of qualified STEM teachers. Participants will also be invited to participate in the Hoosier STEM Academy Mentoring Conference. Upon completion of a course with a grade of C or higher, participants will receive a \$1,375 stipend to help cover the cost of tuition, fees, and/or materials.

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

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

## **Application Process**

### ***Before You Apply***

Students who wish to enroll in one or more courses as a Non-degree Seeking Graduate Student must meet the following admission criteria:

1. Hold an earned bachelor's degree from a college or university that is accredited by its regional accrediting association.
2. Satisfy one of the following:
  - a. An undergraduate cumulative grade point average (GPA) of at least 2.75 on a 4.0 scale (all undergraduate coursework, including work completed prior to the baccalaureate degree, is used to calculate the GPA).
  - b. A cumulative GPA of at least 3.0 on a 4.0 scale in the latter half of the baccalaureate.\*

## **Step 1: Complete the Application**

1. Find information about applying at:  
[http://cms.bsu.edu/academics/collegesanddepartments/gradschool/admissions/ap\\_plication-process](http://cms.bsu.edu/academics/collegesanddepartments/gradschool/admissions/ap_plication-process)
2. Read the information, and then click the "apply now" box. (or go to:  
<https://www.applyweb.com/bsug/index.ftl>)
  - a. When completing the application, apply as a "non-degree seeking student"
  - b. When prompted, choose the "fee waiver" option at the end of the application process and select the "Con Selmer" fee waiver
  - c. Add the following in the comments field: "Applying as part of the consortium teacher's grant for dual-credit licensure; please waive my application fee."
3. Follow the instructions for submitting your transcripts
4. Ask your school principal to send a letter-confirming that your school is considered underserved and/or is experiencing a shortage of STEM teachers; send letters via email to: Dr. Jill Bradley-Levine, [jsbradleylev@bsu.edu](mailto:jsbradleylev@bsu.edu)
5. In order for applications to be processed and students to register for courses on time. The Graduate School must receive all of your application materials in a timely manner.

## **Step 2: Register for Course(s)**

1. Find information about registering for classes at:  
<http://cms.bsu.edu/academics/advising/scheduling/course-registration>
2. Use the username and password you were sent by the Graduate School to log into my.bsu.edu (Graduate Students taking online or on-campus classes will receive a username and password (credentials) from the Graduate School within 4-7 days after acceptance. This will be sent to the email address you provided on the graduate application.)
3. Follow steps on the website above to search for and register for a course.
4. Upon registration, students will receive access to their student account and Blackboard online course portal.

\* Nondegree students who later apply to a degree program must meet all entrance requirements of that program and must have maintained at least a 3.0 GPA in their nondegree coursework. No more than 9 hours earned in nondegree status may be applied to an advanced degree program if the person is later admitted as a degree-seeking student. The department in which the student is studying and the dean of the Graduate School will determine which credit hours earned in nondegree status will apply to a degree program. Credit hours must have been completed within the six-year time limit allowed for completion of a master's degree.

### ***Tuition and Fees***

- Tuition and the technology fee for a 3-hour **online course** will be \$1,316 (\$402/credit hour + \$110 technology fee; students taking more than 7 credit hours pay \$168 technology fee)
- Tuition and the technology fee for a 3-hour **on-campus course** will be \$1,783 (\$402/credit hour + \$110 technology fee, \$277 student services fee, \$53 recreation fee, and \$45 transportation fee)
- Lists of required textbooks are available through the Ball State Bookstore; you may purchase or rent texts through the Bookstore: <http://bsu.bncollege.com/> or through other online book sites.
- **Upon completion of a course with a grade of C or better, the Hoosier STEM Academy will send a stipend of \$1,375 to each participant.**
- Also upon completion of a course, students may obtain an official transcript with the course and grade. Official electronic transcripts are \$12; instructions are available here: <http://cms.bsu.edu/about/administrativeoffices/registrar/transcripts/>

### ***Questions***

Please contact Kizmin M. Jones with questions: [kmjones4@bsu.edu](mailto:kmjones4@bsu.edu)

# Ball State University Courses

## Mathematics

| CRN   | SUBJECT | COURSE | SECTION | CAMPUS | CREDITS | TITLE   | DAYS | TIME |
|-------|---------|--------|---------|--------|---------|---|------|------|
| 34760 | MATH    | 560    | 820     | OL     | 3       | History of Mathematics  | OL   | OL   |
| 36599 | MATH    | 623    | 810     | OL     | 3       | Probability, Data Analysis, and Statistical Reasoning   | OL   | OL   |
| 39480 | MATH    | 640    | 800     | OL     | 3       | Geometry and Measurement for Elementary, Middle School, and Foundational Mathematics Teachers | OL   | OL   |
| 38856 | MATH    | 640    | 801     | OL     | 3       | Geometry and Measurement for Elementary, Middle School, and Foundational Mathematics          | OL   | OL   |

|       |      |     |     |    |   |  |    |    |
|-------|------|-----|-----|----|---|--|----|----|
|       |      |     |     |    |   | Teacher<br>s   |    |    |
| 36841 | MATH | 641 | 820 | OL | 3 | Topics<br>in<br>Geomet<br>ry   | OL | OL |
| 31156 | MATH | 690 | 820 | OL | 3 | Curricul<br>um and<br>Instruct<br>ion in<br>Mathem<br>atics<br>Educati<br>on | OL | OL |

### **MATH 560 -History of Mathematics**

The development of mathematics from pre-history to the seventeenth century. Topics may include number concepts and numeration, algebra, geometry, trigonometry, analytic geometry, and calculus. Prerequisite recommended: MATH 161 or 165. Not open to students who have credit in MATH 460.

3.000 Credit hours.

### **MATH 623-Probability, Data Analysis and Statistical Reasoning**

Students will select and use appropriate statistical methods to analyze data, develop, and evaluate inferences and predictions that are based on data, and understand and apply the basic concepts of probability. Prerequisite: at least one year of teaching experience or permission of the department chairperson.

3.000 Credit hours.

### **MATH 640- Geometry and Measurement for Elementary, Middle School, and Foundational Mathematics Teachers**

Students will develop visualization skills; identify two-and three-dimensional shapes and know their properties; connect geometry to other mathematical topics; research historical topics relevant to elementary and middle school geometry. Prerequisite: at least one year of teaching experience or permission of the department chairperson.

3.000 Credit hours

### **MATH 641–Topics in Geometry**

A survey of topics in contemporary geometry from various perspectives, including conjecture and exploration, formal analysis, and application beyond geometry. Prerequisite: at least one year of teaching experience or permission of the department chairperson.

3.000 Credit hours.

### **MATH 690–Curriculum and Instruction in Mathematics Education**

Focuses on the mathematics curriculum, with emphasis on current issues and trends, on teaching strategies, and standards-based teaching. Looking at mathematics curriculum from a K-12 perspective, students will work on understanding these recommendations in light of previous mathematics curriculum experiences. Prerequisite: at least one year of teaching experience or permission of the department chairperson.

3.000 Credit hours.

### ***Physics***

| CRN   | SUBJECT | COURSE | SECTION | CAMPUS | CREDITS | TITLE   | DAYS | TIME |
|-------|---------|--------|---------|--------|---------|---|------|------|
| 39354 | PHYC    | 681    | 800     | Main   | 3       | Resources and Methodology of Physics Research | OL   | OL   |

### **PHYSICS 681- Resources and Methodology of Physics Research**

Periodical resource material in physics, methodology of literature research. This course may be used to satisfy requirements of the graduate research methodology plan for a master's degree. Prerequisite: permission of the department chairperson.

3.000 Credit hours

### ***Technology Education***

| CRN | SUBJECT | COURSE | SECTION | CAMPUS | CREDITS | TITLE | DAYS | TIME |
|-----|---------|--------|---------|--------|---------|-------|------|------|
|-----|---------|--------|---------|--------|---------|-------|------|------|



|       |      |     |     |        |   |  |    |    |
|-------|------|-----|-----|--------|---|--|----|----|
| 38816 | TEDU | 685 | 800 | Online | 3 | Information Systems for Instruction and Assessment | OL | OL |
|-------|------|-----|-----|--------|---|--|----|----|

**TEDU 685 – Information Systems for Instruction and Assessment**

Examines use and integration of information systems in K-12 and higher education settings. Explores instructional and administrative technologies for assessment, curriculum management, and student information. Examines strategies for using such technologies for evidence-based curricular improvement. Defines leadership responsibilities in planning, deployment, and professional development. Prerequisite: EDTE 670 or permission of the department chairperson.

3.000 Credit hours