



IUP Graduate Handbook
Certificate in Mathematics Education

Department of Mathematical and Computer Sciences

Handbook Updated 2025-2027

Certificate of Mathematics Education

Post-baccalaureate Certificate in Mathematics Education

Department of Mathematical and Computer Sciences

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Program Website

<https://www.iup.edu/academics/find-your-degree/programs/macs/gr/teacher-certificate-in-mathematics-education.html>

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Introduction

The Certificate in Mathematics Education program at Indiana University of Pennsylvania was designed to support individuals who already possess a bachelor's degree and want to enter the field of teaching. The program is a 24-credit post-baccalaureate certificate program that prepares program candidates to teach mathematics for grades 4-8, middle level mathematics, or grades 7-12, secondary mathematics. Candidates may complete the program along a traditional path or with an intern certificate. An intern certificate is for program candidates who are the teacher of record at a school aiming to earn initial certification as a 4-8th or 7-12th mathematics teacher, see Intern Certificate Admissions. The traditional path is for program candidates who are not a teacher of record in a school. This handbook contains essential information for all students enrolled in this certificate program or who are considering enrolling. This information is necessary for admission, registration, advising, and fulfilling all requirements for teacher certification. Keep all of your official papers together with this handbook. Please have this handbook with you each time you meet with your advisor.

Indiana University of Pennsylvania

Founded in 1875 as a normal school, Indiana University of Pennsylvania (IUP) is a world renowned, affordable, student-centered university. IUP combines the academic opportunities of a large university with the highly personalized and intimate learning-centered environment of a small college. Almost 9,000 undergraduate and graduate students are enrolled in our accredited and nationally recognized programs, enjoying innovative learning experiences, engaging in research and service activities with their faculty mentors, becoming lifelong learners, preparing for rewarding careers and productive lives, and developing leadership skills for effective citizenship.

IUP's Civility Statement

As a university of different peoples and perspectives, IUP aspires to promote the growth of all people in their academic, professional, social, and personal lives. Students, faculty, and staff join together to create a community where people exchange ideas, listen to one another with consideration and respect, and are committed to fostering civility through university structures, policies, and procedures. We, as members of the university, strive to achieve the following individual commitments:

To strengthen the university for academic success, I will act honestly, take responsibility for my behavior and continuous learning, and respect the freedom of others to express their views.

To foster an environment for personal growth, I will honor and take care of my body, mind, and character. I will be helpful to others and respect their rights. I will discourage intolerance, hatred, and injustice, and promote constructive resolution of conflict.

To contribute to the future, I will strive for the betterment of the community, myself, my university, the nation, and the world.

Affirmative Action

[Affirmative Action](#)

Title IX Reporting Requirements

[Title IX Reporting](#)

Student Conduct and Student Rights

[Community Standards Policy and Procedures](#)

[Student Rights and Responsibilities](#)

[Students Rights under the Family Educational Rights and Privacy Act \(FERPA\)](#)

Department of Mathematical and Computer Sciences

Department of Mathematical and Computer Science has a strong history for preparing mathematics teachers. IUP's reputation in Mathematics Education is recognized in Pennsylvania and nationally for excellence in preparing teachers for today's classrooms, for future graduate studies, and for a lifelong professional career. As an example, IUP's Master of Education in Mathematics Education has been ranked among the top 15 schools in Best Value Schools in 2023, 2022, and 2021, and recognized by US News and World Report as one of the best schools for online programs in 2025, 2024, 2023, 2022, 2021, and 2020.

Mission Statement and Program Objectives

The mission of the Certificate in Mathematics Education is to provide a quality graduate education that prepares middle level educators or secondary mathematics educators who implement innovative, research-based, and high-quality mathematics instruction to support the learning of each and every student.

The learning outcomes of the certificate program include:

- Demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, connections, and applications within and among mathematical content domains.
- Solve problems, represent mathematical ideas, reason, prove, use mathematical models, attend to precision, identify elements of structure, generalize, engage in mathematical communication, and make connections as essential mathematical practices.
- Incorporate research-based mathematical experiences and strategies, use mathematics-specific technological tools, and use the curriculum standards to develop all students' mathematical understanding and proficiency.
- Use knowledge of adolescent learning, development, and behavior to plan and create sequential learning opportunities grounded in educational research where students are actively engaged in their learning and building from prior knowledge and skills.

- Provide evidence demonstrating that as a result of their instruction, students' conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and application of major mathematics concepts in varied contexts have increased.
- Participate in professional development experiences specific to mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations.

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Admission

Application Deadlines

Applications to the Certificate in Mathematics Education are accepted summer, fall, or spring. A fall or spring start term is highly recommended due to organizing field experiences. Candidates should plan to complete and submit admissions application materials by the following dates to be fully considered for the program.

- **Fall start.** June 15.
- **Spring start.** September 15.
- **Summer start.** March 15.

General Admission Requirements

Admission decisions are based on the qualifications of applicants, the strength of the admissions application materials, and a thorough review of all application materials.

The general admission requirements are for all candidates of the Certificate in Mathematics Education. Qualifications and admission materials are listed below.

Candidate Qualifications

1. B.S. in mathematics or related field from an accredited college or university.
 - Undergraduate degrees outside of a mathematics or related field will be considered.
2. Undergraduate GPA 3.0 or higher
 - Conditional admission will be considered, and removed if candidates maintain a 3.0 GPA or higher upon earning 6 graduate credits of post-baccalaureate coursework.

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3. Earned 6 undergraduate credits in mathematics, and 6 undergraduate credits in English composition (3 credits) and English literature (3 credits).
 - Candidates who reside outside of the 50-mile radius of IUP should contact the graduate coordinator to discuss options pertaining to course work that require on-site supervision of classroom experiences. School placement for EDUC 641 Student Teaching must be within 50 mile/1 hour of IUP Indiana University of Pennsylvania to accommodate IUP faculty's on-site field experience supervision. A school placement that is 1.5 driving time is the maximum for an IUP Supervisor. Placement in a PA school is a requirement for Pre-Student Teaching EDUC 542, but proximity is not. See *EDUC 542 Placement Application* and *EDUC 641 Placement Application*.
 4. Teacher observation and time in a school. Candidates who have not worked in a school will be required to complete observations in mathematics classroom(s). In consultation with the graduate coordinator, candidates will make their own arrangements for the observation, and will complete and submit *Clearances to Castlebranch*, see these sections of the handbook. The graduate coordinator will provide observation documents. Time as a substitute teacher will be considered.

Instructional Intern Certificate Admission Requirements

The Certificate in Mathematics Education considers applicants who hold or aim to apply for Pennsylvania's Instructional Intern Certificate for middle level mathematics or secondary level mathematics. The PA Instructional Intern Certificate is a professional certificate entitling its holder to fill a full-time professional teaching position. An intern certificate is good for three years, where the field experiences are completed through the teaching position instead of a school placement arranged through the Office of Educator Preparation. Candidates who intend to complete the Certificate in Mathematics Education and obtain the PA Instructional Intern Certificate are intern candidates. Candidates who intend to complete the Certificate in Mathematics Education through a traditional path, i.e. not obtain a teaching position, are traditional candidates. Below are the steps to take for admission as an intern candidate.

Intern Candidate Qualifications

1. General admission qualifications are met.
2. Pass Praxis teacher certification testing *before* applying for the PA Intern Certificate. See *Praxis Exam*.
3. Obtain a Pennsylvania Instructional Intern Certificate (Intern 51) for the instructional area you plan on earning, e.g. 4-8th middle level math or 7-12th mathematics. You will do this through the PA Department of Education's portal called Teacher Information Management System (TIMS). Click [here](#) to navigate to TIMS to complete a *New Credential Application* (select Intern 51), and accompanying information. If you have any questions, then reach out the PA Department of Education at 717-PA-TEACH (728-3224) or email ra-edcertquestions@pa.gov.
4. Secure a teaching position in your certification area as the teacher of record, i.e. 4-8 middle level math or 7-12 secondary math. The position can be full-time or part-time.
 - Your school must be in close promity to Indiana University of Pennsylvania to accommodate IUP faculty on-site field experience supervision, which is within 50 mile/1 hour (1.5 hours of driving time is the maximum for an IUP Supervisor) for EDUC 542 and EDUC 641. See *EDUC 542 Placement Application* and *EDUC 641 Placement Application*.
 - In cases where the candidate is not able to acquire employment before or during the last year the Teacher Intern certificate is valid, then IUP will transfer the candidate into a

traditional post-baccalaureate program and secure a school placement for field experience courses.

- IUP must have an affiliation agreement with the district/school where the intern secures a position. An affiliation agreement can be initiated through the Office of Educator Preparation by emailing clinical-services@iup.edu with the name of the school and a contact person.
5. Secure a certified mentor teacher at the school/district who:
- Has certification in candidates content area; three years of full-time experience as a licensed teacher; and at least one year of certified teaching experience in the school entity where candidate is placed.
 - Agrees to complete IUP evaluations for EDUC 542 and EDUC 641; to conduct documented observations and debriefs at least 6 times a semester; and to meet monthly with intern candidate, building principal, and IUP supervisor.

Admissions Application Materials

1. Goal statement—A short essay about how this certificate program will support you in achieving your career goals.
2. Official transcripts for previous colleges attended.
3. A resume or vita (required).
4. Two letters of recommendation.
 - The letters of recommendation should be recent (not older than one year) and should be from individuals who are familiar with your academic ability and potential as a teacher.
 - Letters of recommendation that are specific and detailed tend to be the strongest.
5. Intern certificate candidates are expected to submit two letters of acknowledgement on school letterhead to the program coordinator (see Appendix for Sample Acknowledgement letters).. These should be emailed. One letter of acknowledgement should be from the building principal and the second from your mentor teacher. *Letters of acknowledgement can replace the two letters of recommendation.* Letters of acknowledgement are **required** for intern candidates.

Admissions – Other

- A faculty team will conduct a thorough review for each applicant. Candidates may be required to complete additional course work if coursework/experiences do not match IUP's BSED in Mathematics Education program.
- Expect that writers of letter of recommendations and/or letters acknowledgement will be contacted by members of the admissions committee.
- Candidates may be asked for additional references.
- Eligible candidates for the Certificate in Mathematics Education will be expected to meet with the graduate coordinator prior to an admission decision to discuss the programs expectations.
- Teacher Intern candidates, please be aware of the following:
 - Continuous enrollment is an expectation.
 - The PA Instructional Intern certificate can't be renewed. Again, a PA intern certificate is valid for 3 years. Candidates are expected to complete all program expectations within 3 years.

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- The PA Instructional Intern certificate can be revoked if 1) candidates are not continuously enrolled and 2) dismissed for cause and/or convicted of a crime.

Earn Your Masters of Education in Mathematics Education

The IUP MACS department already offers a Master's in Education degree in Mathematics Education. This certification can be added to this existing program. This offers more options and flexibility for graduate students that are both time and cost effective towards earning a masters degree.

How to Apply

To apply to the Certificate in Mathematics Education, applicants should create an admissions profile and complete the online application at Graduate Admissions www.iup.edu/admissions/graduate/. If you intend to complete the program under an intern certificate, then reach out to the graduate coordinator. There will be an application fee as part of the admissions process. Once your application file is received by Graduate Admissions, they will make sure it is complete. If not, they will hold it until all items have been received. Then they will forward it to the program coordinator where your application will be reviewed, and a decision made about acceptance. The decision will be relayed to Graduate Admissions and you will send you a letter informing you of the decision. You will need to accept your admission decision before your IUP student record can be created.

International applicants should reach out to the program coordinator to discuss admission into the Certificate in Mathematics Education. For more information regarding Admission Classification and Provisional Admission for International Graduate Application, view the Graduate Catalog: www.iup.edu/gradcatalog.

Financial Assistance

Graduate Assistantships

To express your interest in a graduate assistantship you may indicate this on your admissions application. For a scholarship, ensure you reach out to the program coordinator to ask about a scholarship application. Applications can be obtained directly from the graduate coordinator.

Grants, Other Scholarships, and Loan Forgiveness

The National Council of Teachers of Mathematics has scholarships and grant opportunities for educators. May 1 and Nov 1 are the deadlines to submit applications. Please visit the following link for more information: <https://www.nctm.org/Grants/>

Office of Financial Aid

The Office of Financial Aid assists new and continuing students to secure funding as they obtain their advanced degree. Please visit the following links for more information:

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- Office of Financial Aid: www.iup.edu/financialaid/
 - <https://www.iup.edu/admissions/graduate/financialaid/index.html>

Academic Advisement

Upon acceptance into the Certificate in Mathematics Education program, you will be assigned an advisor. Your advisor will be your main contact throughout the program. Your advisor will discuss with you a program of study, including any additional courses from the review of admission materials, and answer questions you might have. As a graduate advisee you are expected to be in touch with your advisor for scheduling classes or with other concerns. You should also take the initiative to be aware of your options in the program.

Students are to follow the Certification in Mathematics Education Program Handbook. Students are responsible for meeting regularly with their advisors, taking the proper coursework, and meeting all requirements for Pennsylvania certification. See the Appendix for an advisement sheet.

Campus Resources & Student Support

The Office of Graduate Education and Academic Planning (formally the School of Graduate Studies and Research): www.iup.edu/graduatestudies/

Graduate Catalog: <https://catalog.iup.edu/index.php>

Office of Student Billing: <https://www.iup.edu/student-billing/>

Office of the Registrar: www.iup.edu/registrar/

Department for Disability Access and Advising: <https://www.iup.edu/disabilitysupport/>

Office of Social Equity: www.iup.edu/social-equity/

IUP Libraries: www.iup.edu/library/

MyIUP: www.iup.edu/myiup/

IUP Navigators: <https://www.iup.edu/life-at-iup/support/navigators.html>

IT Support: www.iup.edu/itsupportcenter/

Veterans and Service Members: www.iup.edu/veterans/resource-center/

IUP Writing Center: www.iup.edu/writingcenter/

IUP Scholarly Editing and Writing Service: <https://www.iup.edu/scholarlycommunication/index.html>

Applied Research Lab: <https://www.iup.edu/arlab/index.html>

IUP Career and Professional Development Center: www.iup.edu/career/

Parking Services: www.iup.edu/parking/

University Police: www.iup.edu/police/ 724-357-2141

Crisis Intervention 24/7 Hotline: 1-877-333-2470

Registration Resources: www.iup.edu/registrar/students/registration-resources/index.html

IUP Email

IUP offers an email account to all active students. **Your IUP email address is the primary means by which the university will contact you with official information and you should use for all IUP official communications. It is your responsibility to check your IUP email regularly.** Visit <https://www.iup.edu/itsupportcenter/get-support/e-mail-and-calendar/index.html> to learn more about

setting up this account. For more information regarding university policy on email communications, view the Graduate Catalog: <https://catalog.iup.edu/index.php>

Graduate Student Assembly

The Graduate Student Assembly (GSA) represents the graduate student body's interests at IUP and within the Indiana community. The GSA makes recommendations related to University-wide and graduate-specific policies and in areas of concern in the cultural, intellectual, and social life of the part- and full-time graduate student. Visit www.iup.edu/graduatestudies/gsa for more information.

Programs and Degrees

The Certificate in Mathematics Education is a 24-credit post-baccalaureate certificate program that prepares you to teach mathematics for grades 4-8, middle level mathematics, or grades 7-12, secondary mathematics. This post-baccalaureate program will certify you to teach middle level or secondary mathematics education in Pennsylvania and at least 45 other states. If you are planning to seek employment in a state other than Pennsylvania, be sure to check the specific requirements for that state's Department of Education web page or contact the Pennsylvania Department of Education.

Program Requirements: Coursework

I. Mathematics Education Core Courses (12 cr.)

MAED 650 - Curriculum and Instruction in Mathematics Education Credits: 3
MAED 652 - Differentiated Instruction in Mathematics Education Credits: 3
MAED 654 - Teaching of Problem Solving in Mathematics Education Credits: 3
MAED 513 - Methods for Teaching Mathematics Credits: 3

II. Mathematics Education Electives (3 cr.)

MAED 559 - Technology-Related Topics in Mathematics Education Credits: 3
MAED 616 - Writing in Mathematics Education Credits: 3
MAED 618 - Mathematics and Cognition Credits: 3

III. Professional Practice (9 cr.)

EDUC 542 - Pre-Student Teaching Clinical Experience II Credits: 3
EDUC 641 - Student Teaching Field Experience Credits: 6

Total Credit Hours (24 cr.)

Program Requirements: Three-Step Process for Teacher Certification

The three-step process is the approved process for all students who are pursuing degrees leading to being teachers. Each of the three steps has requirements that are unique; Step 1) Applying to the Teacher

Education program at IUP; Step 2) Proceeding to student teaching; and Step 3) Being recommended for certification following graduation. This section addresses these steps and is described in further detail below. The Appendix includes a list of useful websites pertaining to the Three-Step Process. Candidates who have a full-time professional teaching position, and an intern certificate will first consult with their advisor about items marked with (*), as these items may not be needed.

Step 1: Applying to the Teacher Education program at IUP.

Apply and obtain admission to the Teacher Education Program at IUP. The following is the list of items and descriptions to complete for consideration to the Office of Educator Preparation.

- Apply and receive acceptance to the Certificate in Mathematics Education Program.
- Have thorough review of admission's materials, including review of official transcripts to receive course requirement list.
- Meet with advisor.
- Complete all courses with a grade of C or higher.
- Maintain an overall 3.0 GPA.
- Set up a CastleBranch account.*
- Obtain all clearances (see *Clearances*).*
- TB (Tuberculosis) Test Screening (see *Clearances*).*
- Obtain PSEA (Pennsylvania State Education Association) Liability Insurance (see *Clearances*).*
- Submit an *EDUC 542 Placement Application* by deadline.*
- Write a philosophy of teaching essay and upload to Electronic Portfolio under My Educational Philosophy.

Clearances.

Schools are not permitted to allow anyone to work in their school without the clearances listed below. All candidates will be required to obtain clearances as part of the admission process. Candidates completing the program along the traditional path will be required to obtain a *Castlebranch* account to log their clearances, see below. Candidates who are completing the program through an intern certificate and are working as a mathematics teacher, are expected to have required clearances as outlined in our affiliation agreements, including liability insurance. Intern candidates will consult with their advisor about clearances and liability insurance, as these are expected per an IUP affiliation agreement with the district.

There is a charge for each clearance check. Students who do not have clearances by course deadlines will not be able to start EDUC courses, and/or removed from their placement, as required by Pennsylvania law. Below is a brief description of each required clearance and links where you can access information to move forward with obtaining them.

Castlebranch Account.

Candidates completing the Certificate in Mathematics Education through the traditional post-baccalaureate path will be required to obtain a CastleBranch account.

CastleBranch is an online management system that will allow you to upload, maintain, and access your clearances from any electronic device. In addition, CastleBranch will monitor your clearance expiration

dates and send individual renewal reminders. Creating a Castle Branch account will initiate some of the clearances. Castle Branch's website is <https://portal.castlebranch.com/IH40/spif/IH40/IH40r>.

- **Act 24**, report of arrest or conviction, must be signed and uploaded to CastleBranch. Use this link to find the form you need to complete: <https://www.livetext.com/doc/11593062#page-51215833>.
- **ACT 34** is a check for past criminal activity and is required by Pennsylvania law for all people who work with children. It involves a record check by the State Police for Pennsylvania residents and also a fingerprint check by the FBI for out-of-state residents. You may register and pay for ACT 34 clearance online through CastleBranch.
- **Act 114**, fingerprinting, is now required for teacher certification. An appointment for having fingerprints must be made prior to the beginning of the field experience term. Your fingerprints must be registered in order for you to work in a school for both the pre-student teaching and student teaching. Use this link to find the directions for completing ACT 114 <https://www.livetext.com/doc/11593062#page-51215833>.
- **ACT 126**, Child Abuse Recognition and Reporting Act. This is mandated reporter training. Here is the link to obtain this training: <https://www.reportabusepa.pitt.edu/>.
- **ACT 151** is a check for past child abuse activity and is also required by Pennsylvania law. You need to use a CastleBranch package code to initiate the child abuse clearance request, then obtain the clearance through the Child Welfare Portal.
- **TB (Tuberculosis) Test Screening**. The TB test (for tuberculosis) is required by the state of Pennsylvania for all people who work in schools. The test is offered free by the Center for Health and Wellness. You may contact the health center at (724) 357 – 2550 or email at health-inquiry@iup.edu with any questions or to schedule an appointment. This screening and the documentation may also be obtained through your physician's office, urgent care, or med-express.
- **PSEA (Pennsylvania State Education Association) Liability Insurance**. Obtain this insurance by going to this website <https://www.psea.org/about-psea/how-to-join/student-registration>.

IMPORTANT: Once you have received your clearances, keep the original copy in a safe place (and print copies) in case you need to present it when you enter the schools. It is important to plan ahead because not having updated clearances can affect your school placements. The clearances are good for one calendar year. **Please be aware, these clearances are also needed for student teaching, and should they expire before you begin your field experiences, you will need to reapply for current, up-to-date clearances.** You must have these clearances to complete EDUC 542 and EDUC 641.

EDUC 542 Placement Application.

Candidates completing the Certificate in Mathematics Education through the traditional post-baccalaureate path will submit an EDUC 542 placement application in order to secure a school placement for this field experience course. Traditional candidates have the option of completing the field experience for EDUC 542 **outside** of the 50 mile/1 hour distance from IUP. Your advisor will discuss this process with you, and deadlines for submitting the placement application. Intern candidates will not be completing an EDUC 542 placement application, due to the candidates full-time teaching position serving as the placement for the field experience.

Step 2: Proceeding to student teaching.

Once you have been admitted to the Teacher Education Program in the College of Education, you must meet the following eligibility requirements to begin EDUC 641 student teaching and proceed to Step 2 (which occurs during your spring semester). The following is the list of items and descriptions (if needed) to complete for consideration to proceed to Student Teaching.

- Minimum GPA of 3.0.
- Completed Step 1 (above).
- Completed all courses with a grade of C or higher.
- Praxis exam(s). Traditional post-baccalaureate candidates passed Praxis by Jan 1 for spring student teaching. Intern candidates pass Praxis before applying for PA Intern Certificate.
- Current ACT 24, ACT 34, ACT 114, ACT 151 clearances, Act 126 training, TB test screening, & proof of student liability insurance (In Castle Branch).*
- Filed a student teaching application with the Office of Educator Preparation the semester before you plan to do your student teaching. *
- Submit an *EDUC 641 Student Teaching Application* by deadline.*
- Submit Electronic Portfolio.
- Register for EDUC 641 Student Teaching (6 credits).

EDUC 641 Student Teaching Application.

Candidates completing the Certificate in Mathematics Education through the traditional post-baccalaureate path will complete an EDUC 641 placement application in order to secure a school placement for this course. Traditional candidates will be placed at a school within a 50 mile/1 hour distance from IUP (maximum 1.5 drive time) to accommodate the in person supervision by an IUP supervisor, a requirement by the Pennsylvania Department of Education. Your advisor will discuss this process with you, and deadlines for submitting the placement application. Candidates who are completing the program through an intern certificate will not be completing an EDUC 641 placement application, due to the candidates full-time teaching position serving as the placement for student teaching.

Electronic Portfolio.

By the end of EDUC 542, you will submit all necessary documents to your Electronic Portfolio (See Appendix).

Step 3: Being recommended for certification following graduation.

The following is the list of items and descriptions (if needed) to complete for recommendation for teacher certification.

- Successful completion of Step 2.
- Successful completion of Student Teaching with grade of C or better.
- Maintenance of a cumulative GPA of 3.0.
- If needed verification of sliding scale Praxis results based on final cumulative GPA.
- Final satisfactory review of the Teacher Work Sample.
- Completed application for Pennsylvania Teacher Certification.
- Copy of Teacher Information Management System (TIMS) coversheet form PDE website.
- Copy of IUP Marketplace receipt for certification processing.

- The recommendation of your student teaching supervisor and program coordinator.
- The recommendation of the IUP Teacher Certification Officer.

Student Teaching. The forms that will be used to evaluate you during student teaching can be found in the *Evaluation Forms – Found in Live Text* at the following website:

<https://www.livetext.com/doc/11593062#page-51878612>

Work Sample. The directions for your work sample can be found in the *Evaluation Forms – Found in Live Text* at the following website: <https://www.livetext.com/doc/11593062#page-51878612>

Application for Pennsylvania Teacher Certification. Information regarding your application to apply for PA teacher certification can be found in The Office of Educator Preparation (EPP) *PowerPoints and Documents* at the following link: <https://www.livetext.com/doc/11593062#page-51878612>

Teacher Information Management System (TIMS) and IUP Marketplace Receipt. Information about TIMS and the Marketplace receipt can be found under *Presentations and TIMS – Applying for Certification* under the folder *The Office of Educator Preparation (EPP) PowerPoints and Documents*.

Course Descriptions

MAED 513 - Methods for Teaching Mathematics (3 credits)

Examines the current curricula and methods of instruction used in middle and secondary level mathematics classrooms. Follows an investigative approach to middle-level and secondary mathematics instruction through hands-on activities that are standards based. Explores methods of teaching in diverse classrooms and teaching students with special needs.

MAED 559 – Technology-Related Topics in Mathematics Education (3 credits)

Provides teachers with skills that will enable them to use technology as a tool to support students' engagement in and learning of mathematics. Examines grade-level appropriate technologies and their effective uses in the mathematics classrooms such as dynamic geometry software, interactive web applications, calculators, and data collection probes.

MAED 616 - Writing in Mathematics Education (3 credits)

Topics include using writing as a teaching tool, how to introduce writing into K-12 mathematics classes, and the types of writing that can be done. Both formal and informal mathematics writing will be explored. Rubrics and other forms of writing assessment will also be examined.

MAED 618 - Mathematics and Cognition (3 credits)

Familiarizes K-12 teachers with how the brain learns mathematics. Covers topics including cognitive mechanisms for learning mathematics, factors that contribute to learning and difficulties with learning, and instructional strategies for the preschool through adolescent brain.

MAED 650 - Curriculum and Instruction in Mathematics Education (3 credits)

Familiarize the K-12 teacher with the philosophical and psychological issues that guide the development of mathematics curricula. Topics include a history of the development of mathematics curriculum; innovative curricula that have had impact on teaching and learning; state and national standards and

their impact on mathematics curricula; methods of implementing a contemporary program; and analysis of current curricula.

MAED 652 - Differentiated Instruction in Mathematics Education (3 credits)

Explores topics related to essential components of differentiated instruction in a mathematics classroom through the exploration of tools, simulations, discussions, and research. Provides opportunities to create original differentiated products and reflect on how differentiated instruction connects to the classroom. Differentiated strategies will be embedded and modeled.

MAED 654 - Teaching Problem Solving in Mathematics Education (3 credits)

This course is intended to teach teachers how to become better problem solvers and teaches problem-solving pedagogy appropriate for the K-12 mathematics classroom.

EDUC 542 - Pre-Student Teaching Clinical Experience II (3 credits)

Develops and refines competencies that relate to individual major fields of teaching through university-based instruction as well as participation and teaching in preK-grade 12 field experience. Also incorporates strategies and techniques for the delivery of instruction to all students, including those with special and English language learning needs.

EDUC 641 - Student Teaching Field Experience (6 credits)

Provides experience teaching in the content area and grade level of the certification program. Includes coordination and supervision by a university faculty member and school supervision by a certified mentor teacher. Efforts are made to provide opportunities to work with students with exceptionalities and diverse backgrounds. Students must meet all requirements for admission to Teacher Certification.

Other Information for Clinical Courses

EDUC 542 - Pre-Student Teaching Clinical Experience II

The course EDUC 542 - Pre-Student Teaching Clinical Experience II is required by the Pennsylvania Department of Education and part of the Certificate in Mathematics Education program at IUP. Below is more information about this clinical experience.

- Intern candidates.
 - The full-time teaching position will serve as the placement for this course.
 - During the fall semester, intern candidates create artifacts for their Electronic Portfolios (See Appendix), and set goals for student teaching.
 - The EDUC 542 instructor will make early contact with the mentor teacher to discuss expectations.
- Traditional candidates.
 - Traditional candidates will complete the *Pre-Student Teaching Application* with their advisor prior to EDUC 542. See *Pre Student Teaching* under *Step 1/Placement Applications and Forms* at the following link:
https://www.livetext.com/doc/11593062?review=#section-51215921_153180964

- All placements for EDUC 542 Pre-Student Teaching are made by officials in the Office of Educator Preparation. Candidates will be sent an email when their placement is confirmed.
- *Pre-Student Teaching Meeting.* The teacher candidate must make arrangements with their mentor teacher prior to the beginning of their time in the school.
- Mentor teachers are expecting to hear directly from you as soon as placements are made, typically over the summer.
- Look on the email from IUP's Office of Educator Preparation for the e-mail address of the mentor teacher. Send your mentor teacher an email, introducing yourself and asking if there is anything you can do to prepare over summer and when might be a good time to meet.
- During the fall semester, traditional candidates complete the required 95 hours of observation and participation in schools, create artifacts for their Electronic Portfolios (See Appendix), and set goals for student teaching.
- The EDUC 542 instructor, your assigned field experience supervisor, will make one early contact with the mentor teacher. Students should not begin their placements until they have notified their supervisor.

EDUC 641 - Student Teaching Field Experience

EDUC 641 is 6 credits at the graduate level. The EDUC 641 course is a the fifteen-week student teaching experience that complies with the Pennsylvania State, INTASC, and CAEP standards for teacher certification.

Candidates enrolled in this course will:

- Continue working with their mentor teacher from EDUC 542.
- Complete up to and including Step Two of the Three-Step Process for teacher certification.
- Have current Act 34 (criminal record check), Act 151 (child abuse) clearances, Act 114 (Fingerprinting), Act 24 (report of arrest or conviction), and Act 126 training.
- Complete the Application for PA State Certification
- Traditional candidates complete the necessary *EDUC 641 Student Teaching Application* the semester prior to student teaching. See instructions at the following link:
<https://www.livetext.com/doc/11593062#page-51215883>

Other important items for students who plan to enroll in EDUC 641 are:

- *Student Teaching Calendar*
The student teaching calendar can also be found on the LiveText page for student teachers at <https://www.livetext.com/doc/11593062>. Please look it over carefully and plan accordingly.
- *Student Teaching Handbook*
Before student teaching, all student teachers must download the Student Teaching Handbook on the LiveText page at <https://www.livetext.com/doc/11593062>. Though some of the information included in the Student Teaching Handbook must be adapted for the Post-Baccalaureate program, the majority of the information is relevant.
- *Student Teaching Placement*

Your university supervisor is the professor of record for your student teaching experience and will assign the grade.

- *Taking Courses While Student Teaching*

Taking courses while student teaching is discouraged and will be by approval only. Questions regarding this policy should be discussed with the Coordinator of the Certificate in Mathematics Education and with the Dean's Associate for Student Teaching.

Evaluation of Students

For information regarding graduate policies on grading, view the Graduate Catalog:

<https://catalog.iup.edu/index.php>

Required GPA, Course Grades, and Evaluations. Students must maintain a minimum GPA of 3.0 for Pennsylvania state teacher certification. Additionally, students must earn a C or better in all course work and have passing scores on all field experience evaluations.

Praxis Exams. Passing teacher certification testing is a requirement for Pennsylvania teacher certification. Traditional candidates must pass the Praxis certification testing for their appropriate certification level by Jan 1 for spring enrollment in EDUC 641 Student Teaching. Intern candidates must pass their certification before applying for the Pennsylvania Intern Certificate.

For secondary level mathematics, grades 7-12th, candidates need to earn a 159 or higher on exam code 5165.

For middle level mathematics, grades 4-8th, candidates need to earn the following scores.

- Earn a 162 or higher on exam code 5153.
- Earn a 152 or higher on exam code 5154.
- Earn a 164 or higher on exam code 5155.
- Earn a 173 or higher on exam code 5158.

Program candidates can consult this website to schedule their exam: <https://praxis.ets.org/>. When taking the Praxis, please indicate *Indiana University of Pennsylvania* and the *Pennsylvania Department of Education as score recipients*. Also plan to submit a copy directly to the graduate coordinator Valerie Long at vlong@iup.edu.

IUP provides free study materials to support you as you study for the Praxis exams. Once you become an IUP student, ensure you reach out to your advisor about this resource.

Degree Completion

Program Requirements. There will be verification of all requirements for admission to student teaching. If the requirements are not met, you will be sent an e-mail informing you that you will be un-enrolled from student teaching until the deficiencies are removed. Please see requirements for Step 2 and Step 3 above. Both Step 2 and Step 3 must be fully met to complete the certificate program.

Applying for Graduation. Post-baccalaureate teacher candidates apply to graduate through MyIUP. Students are required to apply for graduation – which is different than participating in the commencement ceremony – by the established deadlines.

Applying for graduation allows students to receive their diploma and a transcript reflecting the completed certificate program. Students apply to graduate based on the semester they are completing their final course(s) in the program.

After applying for graduation, graduate students will be able to confirm their attendance for the commencement ceremony the following day. This is NOT automatic. You must tell IUP that you want to walk across the stage at the commencement ceremony. (An automated overnight process needs to occur before one can view the confirm attendance link located on the MyIUP home page.)

- **May and August graduates** can confirm their attendance to participate in the **May ceremony**.
- **December and January graduates** can confirm their attendance to participate in the **December ceremony**.

For more information about graduation, view the following link:

<https://www.iup.edu/commencement/graduate/how-to-apply-for-graduation.html>.

University Policies and Procedures

University policy is the baseline policy. Programs may have policy that is more stringent than the University baseline policy; however, not less stringent than the University baseline policy. For questions regarding this statement, please contact [Program Coordinator] or the Office of Graduate Education and Academic Planning.

Academic Calendar

View the IUP Academic Calendar: www.iup.edu/news-events/calendar/academic/

The following university and graduate policies can be found at <https://catalog.iup.edu/index.php>

Academic Good Standing

Academic Integrity

Bereavement-Related Class Absences

Continuous Graduate Registration for Dissertation and Thesis

Grade Appeal Policy

Graduate Fresh Start Policy

Graduate Residency Requirement

Leave of Absence Policy

Time Limitations

Time-to-Degree Masters/Doctoral Dismissal Appeal Policy

Time-to-Degree Extensions for Master's Thesis and Doctoral Dissertation

Transfer of Credits Policy

Research

Graduate Catalog: <https://catalog.iup.edu/index.php>

Research and Innovation: www.iup.edu/research/

Applied Research Lab (ARL): <https://www.iup.edu/arل/index.html>

Appendices

Appendix – Sample Principal/Supervisor Acknowledgement Letter

Place content on school letterhead, inserting the appropriate information.

Dear Admissions Committee for the Certificate in Mathematics Education program,

I verify **[insert teacher's name]** is the teacher of record at this school for **[insert teacher's classes at school]**. I am aware of the teacher's acceptance to Indiana University of Pennsylvania's Certificate in Mathematics Education program to earn **[insert middle level or secondary level]** mathematics teaching credentials, and **[insert intention to apply or application]** for a Pennsylvania Intern Certificate, which is valid for up to three years.

I am also aware and will support the intern teacher's IUPs Certificate in Mathematics Education program requirements. These are:

1. Continuous enrollment.
2. One-year of monthly documented observations of teacher from an IUP supervisor. During this year, monthly meetings with mentor, IUP supervisor, and building principal are expected.
3. A mentor who has at least 3 years of teaching experience in the same certification area the intern teacher aims to complete; has one year of time at this school; is willing to conduct documented observations and debriefs at least 6 times per semester; and is willing to complete rubrics evaluating teacher each semester.
4. If needed, a signed affiliation agreement.

I will reach out with any questions to Valerie Long (vlong@iup.edu), program coordinator for the Certificate in Mathematics Education program.

Sincerely,

Print Name

Signature and Date

Contact Information

Appendix – Sample Mentor Teacher Acknowledgement Letter

Place content on school letterhead, inserting the appropriate information.

Dear Admissions Committee for the Certificate in Mathematics Education program,

I am aware of [**insert teacher's name**] acceptance to Indiana University of Pennsylvania's Certificate in Mathematics Education program to earn [**insert middle level or secondary level**] mathematics teaching credentials, and [**insert intention to apply or application**] for a Pennsylvania Intern Certificate, which is valid for up to three years.

Also, I am aware and will support the intern teacher's IUPs Certificate in Mathematics Education program requirements as a mentor teacher. I confirm I have at least 3 years of teaching experience in the same certification area the intern teacher aims to complete and have at least one year of time at this school.

I understand the following are expectations for IUPs Certificate in Mathematics Education program. I agree to:

1. Meet monthly with intern teacher, IUP supervisor, and building principal.
2. Conduct documented observations and debriefs at least 6 times per semester.
3. Complete rubrics evaluating teacher each semester.

I will reach out with any questions to Valerie Long (vlong@iup.edu), program coordinator for the Certificate in Mathematics Education program.

Sincerely,

Print Name

Signature and Date

Title and Contact Information

Appendix – Program Advisement Sheet

I. Mathematics Education Core Courses – 12 credits			
Course	Semester Offered	Semester Taken	Completed?
MAED 650 Curriculum and Instruction in Math Education (3 cr)	Summer Odd		
MAED 654 Teaching Problem Solving in Math Education (3 cr)	Summer Even		
MAED 652 Differentiating Instruction in Math Education (3 cr)	Summer Odd		
MAED 513 Methods for Teaching Math (3 cr)	Fall		
Course	Semester Offered	Semester Taken	Completed?
MAED 559 Technology-Related Topics in Math Education (3 cr)	Spring Odd		
MAED 616 Writing in Mathematics Education (3 cr)	Fall Odd		
MAED 618 Mathematics and Cognition (3 cr)	Fall Even		
Course	Semester Offered	Semester Taken	Completed?
EDUC 542 - Pre-Student Teaching Clinical Experience II (3 cr)	Fall		
EDUC 641 - Student Teaching Field Experience (6 cr)	Spring		
Course	Semester Offered	Semester Taken	Completed?

Appendix – Useful Websites

- College of Education and Communications: <http://www.iup.edu/education/>
- IUP Teacher Education Forms: <https://www.livetext.com/doc/11593062>
- Department of Mathematical and Computer Sciences
<https://www.iup.edu/math-computer-sciences/index.html>
- InTASC Standards: https://ccsso.org/sites/default/files/2017-12/2013_INTASC_Learning_Progressions_for_Teachers.pdf
- ISTE Standards
<http://www.iste.org/standards/nets-for-teachers/nets-for-teachers-2008.aspx>
- IUP's Office of Educator Preparation: <http://www.iup.edu/teachereducation>
- National Council of Teachers of Mathematics: <http://www.nctm.org>
- NCTE/CAEP Program Standards: <http://caepnet.org/>
- PA Department of Education: <http://www.education.state.pa.us>
- PA Department of Education Standards Aligned System <http://www.pdesas.org>
- PA State Education Association: <http://www.psea.org/>
- Praxis II Information: <https://www.ets.org/praxis/prepare/materials/>

Appendix – Electronic Portfolio Step 2 Guidelines

At the end of EDUC 542, students submit an Electronic Portfolio that includes evidence showing that they have met selected Interstate Teacher Assessment and Support Consortium (InTASC) Standards, ISTE, and program standards. The InTASC standards, a core set of expectations for all teachers, are also an integral part of the Mathematics Education program and are reflected in our graduates' professional portfolios. Below are the InTASC standards. Evidence includes 30 artifacts related to the InTASC standards from coursework as well as particular assignments from EDUC 542. The Electronic Portfolio also includes a home page, a teaching philosophy, and a standards page with links to artifacts. At the end of EDUC 542, candidates meet with the course instructor, at which time the course instructor completes the Electronic Portfolio Step 2 checkout. Electronic Portfolios are forwarded to the Office of Educator Preparation in the College of Education and Communications along with final evaluations, providing evidence of candidates' completion of all EDUC 542 and Step 2 requirements. The Electronic Portfolio represents necessary components of portfolios (collection, selection, and reflection) and also serves as an assessment tool to indicate candidates' proficiencies while providing evidence for having met CAEP standards.

THE LEARNER AND LEARNING

1. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.
2. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
3. The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

CONTENT KNOWLEDGE

4. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he/she teaches and creates learning experiences that make these aspects of the discipline accessible and meaningful for learners to assure mastery of the content.
5. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

INSTRUCTIONAL PRACTICE

6. The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.
7. The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.
8. The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.

PROFESSIONAL RESPONSIBILITIES

9. The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her choices and actions on others (learners, families, other professionals and the community), and adapts practice to meet the needs of each learner.
10. The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

Signature Page

My signature below indicates that I am responsible for reading and understanding the information provided and referenced in this department/program student handbook.

_____[please initial] I understand my program coordinator may share this document with the Office of Graduate Education and Academic Planning.

Print Name

Signature

Date

Submit to Valerie Long at vlong@iup.edu

The Department of Mathematical and Computer Sciences will keep this signed document on file.