MicroCredentials
Promoting IMSA's Signature Strategy

Connecting the Academy & Outreach

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Illinois Mathematics and Science Academy
The Illinois Mathematics and Science Academy® (IMSA) develops creative, ethical leaders in science, technology, engineering and mathematics. As a teaching and learning laboratory created by the State of Illinois, IMSA enrolls academically talented Illinois students (grades 10-12), in its advanced residential academic program.

IMSA is both a public residential Academy and a catalyst and laboratory for the advancement of STEM teaching and learning statewide, with responsibility to stimulate further excellence for all Illinois schools in mathematics and science through student and educator outreach, teacher training and turnkey STEM curricula, student enrichment and entrepreneurship and makerspace education.
The primary role of the Academy shall be to offer a uniquely challenging education for students talented in the areas of mathematics and science.

The Academy shall also carry a responsibility to stimulate further excellence for all Illinois schools in mathematics and science.
IMSA Core Competencies

INQUIRY-BASED TEACHING
Inquiry-based teaching promotes analytic thinking, knowledge generation and application, and construction of meaning through mindful investigation driven by compelling questions that engage the learner’s curiosity.

PROBLEM CENTERED LEARNING
Problem-centered learning provides experiences in which learners grapple with complex, meaningful, open-ended problems of our world. Learners provide potential evidence based solutions or responses to these problems.

COMPETENCY-DRIVEN CURRICULUM
Competency-driven experiences are those which enable students (1) to acquire strong bases of disciplinary content knowledge and skills; (2) to use the ideas, processes, and tools of the disciplines for acquisition and generation of new knowledge; and (3) to apply knowledge when addressing issues and solving real-world problems.

INTEGRATED STEM
Integrative learning experiences are those which forge meaningful connections of concepts, constructs, and principles within and across academic subjects and real-world situations.
Educator Development – Identity transformation

Program-Driven

- IMSA Fusion
- STEM on Demand
- NGSS training
- Shifting Science PD
- State & National conferences
- Teacher Institute Days
- Illinois Math Science Partnerships
- School STEM fairs
- Teacher workshops
- POP (Pedagogy of Practice)
- Educator Externships

Mission Driven

We provide professional development to educators rooted in IMSA’s 4 core competencies (inquiry-based, problem-centered, competency-driven, integrative) which further our mission of, “Igniting and nurturing creative, ethical, scientific minds that advance the human condition”
IMSA Educator MicroCertification and Micro-Credentials Program

- Inquiry-Based Teaching
  - Introduction
  - Learning Experience #1
  - Learning Experience #2
  - Learning Experience #3
  - Learning Experience #4
  - Learning Experience #5
  - Portfolio
- Problem-Centered Learning
  - Introduction
  - Learning Experience #1
  - Learning Experience #2
  - Learning Experience #3
  - Learning Experience #4
  - Learning Experience #5
  - Portfolio
- Competency-Driven Curriculum
  - Introduction
  - Learning Experience #1
  - Learning Experience #2
  - Learning Experience #3
  - Learning Experience #4
  - Learning Experience #5
  - Portfolio
- Integrated STEM
  - Introduction
  - Learning Experience #1
  - Learning Experience #2
  - Learning Experience #3
  - Learning Experience #4
  - Learning Experience #5
  - Portfolio

= IMSA Educator MicroCertification
What is a micro-credential:

Micro-credentialing is a form of professional development that is quickly gaining popularity among people looking to continue their education or advance in their careers. Specific characteristics of these professional development systems highlight its usefulness to providing quality education outreach. According to French and Berry, a micro-credential is described as being a set of “competency-based, personalized, small-scale professional development modules that are suited for anytime/anywhere learning and allow teachers to show what they can do, not only what they know.” (Berry, 2017). These professional development systems are often designed as courses, or a set of online or blended modules offering bite-sized methods to acquire new knowledge or skills (ALA TechSource, 2019). With micro-credentials being offered at a variety of levels across multiple disciplines and areas of study within those disciplines (ALA TechSource, 2019), this form of continuing education presents a personalized route for professional development.
LEARNING EXPERIENCES (LE)
- Approx 3 hour experience + application and dissemination
- Available to all educators, any grade level and discipline.
- Include a research base, pedagogy, instructional strategies and sample lesson plans focused on increasing student learning.
- Identified with a grade level band, content area, and instructional focus
- Includes an "Apply and Reflect" assignment

SUMMATIVE PORTFOLIO
- Demonstration of teaching of the Micro-Credential strand
- Artifacts supporting the implementation and professional learning
- Professional Reflection on impact on instructional practice
IMSA Educator Micro Certification (micro-credentials+)

**Timeline**

**FY19**

- **Nov**: Hire on-line speicalist
- **Dec-June**: Develop structure for MicroCertification
- **Jan**: Introduce CWPDSs to online teaching & learning
- **Feb-May**: Develop intro to core competencies
- **March**: Determine LMS needs
- **June**: Market research for pricer
- **June**: Moodle upgrades

**FY20**

- **Aug**: Create general marketing brochure
- **Aug-Dec**: Beta test intro courses
- **Sep-Jan**: Edit and revise intro courses
- **Sept-Oct**: Catalogue current offerings by competency & grade level
- **Nov-Dec**: Gap analysis of current offerings
- **Dec**: First mailing to Illinois admin & teachers
- **Dec-April**: Build LEs to fill in gaps for minimum of 2LEs/grade level/competency
- **Sept-May**: STEM Thinking
  - Thursdays PD - record for online
- **Sept-June**: Develop 16 on-line LEs based on existing PD (4 per quarter)
- **Sept-May**: Revise current PD to focus on competencies 36 F2F LEs prepped for launch
- **March**: 2nd mailing to Illinois admin & teachers
- **April**: "Go Live" with online intros as MOOCs registration for June LEs
- **May**: 3rd mailing to Illinois admin & teachers
- **June**: On-line and F2F LEs begin; minimum 40 LEs for kick-off

**FY21**

- **July 2020**: Full Year one of MicroCertification begins
- **July-June**: 14 LEs offered each month, at least 8 online
- **July-June**: 40 additional LEs created, complete program PreK-12, all competencies
- **July-June**: Edit and revise LEs after 2nd offering
- **June 2021**: Target for 20 teachers complete the entire MicroCertification,
- **June 2021**: 100+ teachers on target to complete by FY22
- **June 2021**: 500+ teachers in "the system"

**FY22**

- First 20 MicroCertified "IMSA Educators" to serve as "train the trainers" for IMSA’s CTL Educator Development programs
- 100+ educators from around the globe complete the MicroCertification
- 5 schools approved as IMSA Outreach Schools
Questions?