

**NEW UNITS OF INSTRUCTION, PUBLIC SERVICE,  
AND RESEARCH AT PUBLIC UNIVERSITIES**

**Submitted for:** Action.

**Summary:** This item requests approval of four degree programs at four public universities.

**Action Requested:** That the Illinois Board of Higher Education approve the following:

Eastern Illinois University

- Master of Science (M.S.) in Technology in the North Suburban Region

Illinois State University

- Master of Science (M.S.) in Chemistry Education in the Central Region

University of Illinois at Chicago

- Master of Arts in the Teaching (MAT) of Spanish in the Chicago Region

Western Illinois University

- Master of Science (M.S.) in Biology in the Chicago Region



STATE OF ILLINOIS  
BOARD OF HIGHER EDUCATION

**NEW UNITS OF INSTRUCTION, PUBLIC SERVICE,  
AND RESEARCH AT PUBLIC UNIVERSITIES**

By statute, the Illinois Board of Higher Education is responsible for approving new on-campus and off-campus units of instruction, organized research, and public service, and units of administration proposed by public university governing boards. The Board's approval criteria, defined in rules adopted for administering the statute, address university mission, academic control, faculty and staff, support services, financial resources, student demand, curriculum, statewide need, and congruence with Board policies and priorities. In addition to the approval criteria in rules, each new program was reviewed for its contributions to the goals of the *Illinois Public Agenda for College and Career Success*, which sets forth new priorities to guide Illinois higher education in the first decade of the new millennium. Staff recommendations are based on analyses of application materials and responses to staff questions, and, for advanced degree programs, recommendations of external consultants.

**Eastern Illinois University**

**Proposed Program Title:** Master of Science (M.S.) in Technology in the North Suburban Region

*Projected Enrollments:* Eastern Illinois University is projecting that enrollments in the proposed Master of Science (M.S.) in Technology program will grow from 25 students in the first year to 45 students in the fifth year. It has estimated that 20 to 25 degrees will be conferred in the program every two years beginning in the third year of operation.

**Background**

Eastern Illinois University (EIU or University) requests authority to offer the Master of Science (M.S.) in Technology in the North Suburban Region. The proposed program will build upon the success of the same program currently offered by the University on campus. The program is popular, and it enrolled 123 students in Fall 2008, and 56 students were awarded the degree in fiscal year 2008. The M.S. in Technology program is for qualified cohorts of high school teachers of technology in the North Suburban Region. As part-time students, it will take two to three years for the students to complete the program. The M.S. in Technology program is designed to provide its students with the advanced knowledge and skills they will need to teach up-to-date instruction that qualify them to offer dual credit courses to high school students. Offering dual credit courses will support the statewide priority to reduce time-to-degree completion of undergraduate degrees with significant cost savings to students.

The University plans to offer the proposed program in response to a request by an Education to Career (ETC) Partnership (the Partnership) consisting of school districts in the Chicago's north suburbs charged with helping students and teachers secure resources for the teachers' professional and career development. In Fall 2008, the representatives of the Partnership met with the University's officials from the Lumpkin College of Business and Applied Sciences and the School of Technology to explore and determine the feasibility of offering the program in the region. Subsequently, the University's planning committee worked with the school districts and identified the needs of technology teachers in the region, and subsequently a curriculum was designed to address the needs. The knowledge base identified by the Illinois Manufacturing Association was used as a guide to fine tune the course selections for the expected cohorts of students. In March 2009, the Chair of the Technology program, the graduate coordinator, and two faculty members from the School of Technology visited high schools in the school districts, toured the school facilities, and had extensive conversations with teachers, and school administrators, among others. After careful review, the school districts approved the cohort program for teachers of technology or applied technology encompassed by the M.S. in Technology program.

### **Need**

*1050.30(a)(6): A) The unit of instruction, research, or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research, or public service meets a need that is not currently met by existing institutions and units of instruction, research, or public service.*

As summarized above, the proposed program is designed in response to a request to the University by a Partnership of North Chicago suburb school districts with need for the University's M.S. in Technology program to serve cohorts of their technology teachers. Currently, master's degree programs are offered in the state by only Illinois State University (ISU) and Eastern Illinois University. Illinois State University's program is offered in the Central Region and the West Suburban Region. The proposed program is not currently offered in the North Suburban Region, including high schools in North Chicago. On the basis of the information provided by the group of school districts in the North Suburban Region, there is significant need for the proposed program. For example, District D214 alone indicated that approximately 30 of its teachers in the area of applied technology would be interested in the proposed program. The University has projected that approximately 45 students will be enrolled in the M.S. in Technology program in the fifth year of operation and that between 20 to 25 degrees will be awarded to students in the program every other year beginning in the third year of operation.

The Illinois State Board of Education's (ISBE) 2008 report on *Educator Supply and Demand* includes vocational teachers among occupations for which there will be the highest demand through 2012, and that technology educators will be hired at rates exceeding the average for all occupations. In addition, the Illinois Department of Employment Security's (IDES) 2006-2016 employment projections indicate that the average annual job openings for vocational teachers at the secondary school level will total 116. Furthermore, the vast majority of teachers who will be admitted to this program are already employed or they will be employed as school teachers. Taken together, these documentations show that employment prospects for teachers of vocational education are quite bright compared to other occupations in the state.

## **Comparable Programs in Illinois**

Only Illinois State University (ISU) and Eastern Illinois University currently offer master's degree programs in technology for school teachers in Illinois. ISU's program is offered in the Central Region, where the University is located, and in the West Suburban Region. The proposed program is not offered by any college or university in the North Suburban Region. Northern Illinois University (NIU), Western Illinois University (WIU), and Southern Illinois University at Carbondale (SIUC) offer master's degree programs focusing in industrial management or manufacturing systems, which are related, but not the same as technology.

## **Mission and Objectives**

*1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.*

The primary goal of the proposed graduate program in technology is to prepare its students to become successful leaders in today's technological and global environment. The program is designed to provide students with opportunities for developing advanced professional, technical, and personal competencies in the field of technology for high school teachers. It will enable students to identify, develop, and implement quality strategies and practices in organizations, in addition to enhancing the students' research and communication skills necessary for technological leadership in schools. Additionally, students will gain an appreciation of ethical and social implications of technology related to a global and technological society. The goals and objectives of this program are consistent with, and support the mission of Lumpkin College of Business and Applied Sciences, the School of Technology, and the University.

## **Curriculum and Assessment**

*1050.30(b)(1): A) The caliber and content of the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives, and appropriate academic record keeping.*

*1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research, or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.*

## **Admission Requirements**

Admission requirements for the M.S. in Technology program consist of:

- meeting all Graduate School admission requirements;
- completing a baccalaureate degree in an appropriate academic major such as computer science, engineering, technology management, or vocational education with a minimum grade point average (GPA) of 2.75 on a 4.0 scale in the last 60 semester hours of graded academic coursework;

- completing an essay summarizing the students' background, goals, work experience, and reasons for seeking to earn a master's degree in the program;
- completing the departmental application; and
- submitting two letters of recommendation on the departmental form.

## Curriculum

There are several learning objectives for the M.S. in Technology program, including preparing students to:

- analyze, apply, and evaluate concepts of effective leadership;
- possess knowledge of strategy, principles, and tools of quality systems as applied to business and industry;
- be able to conduct intellectual research in technology;
- develop understanding of the global impact of technology; and
- be able to apply critical thinking and problem solving skills in areas of career and technical education, technology management, training and development, and computer technology.

The curriculum of the M.S. in Technology program consists of four options related to career and technical education, technology management, training and development, and computer technology. To graduate from the program, a student must complete a minimum of 34 semester hours with a minimum of a 3.0 GPA on a 4.0 scale. All courses for the program are at the 500 or higher levels, except two 400-level courses in statistics and management.

Every student in the program must complete four required graduate core courses comprising 12 semester hours in Science and Technology, Total Quality, Research in Technology, and Global Technology. Fifteen semester hours in the program are to meet the program's elective course requirements related to one of the four options in the program. The five courses comprising 15 hours may be completed from the following seven graduate courses or other courses with the permission of the faculty. The seven courses are: Statistical Quality Assurance, Manufacturing Management, Multimedia and Web Technology, Industrial Systems, Issues and Trends in Technology, Design for Manufacturing, and Diffusion of Innovation.

A one credit independent study course, TEC 5990 Independent Study, must be completed by all students prior to graduation as a part of the department's certification of comprehensive knowledge requirements. To complete this requirement, a student must demonstrate his or her ability to integrate the knowledge and skills learned in the program to solve organizational problems and improve performance. The certification of comprehensive knowledge requires the student to conduct an independent study under the direct supervision of a graduate faculty, in order to complete a written report or an original research paper and an oral presentation. The remaining six semester hours will come from elective courses selected with the advice of the program faculty.

## Assessment of Student Learning Outcomes

Student learning outcomes in the M.S. in Technology program will be assessed using both direct and indirect measures. Direct assessment of student gains in knowledge, disposition, and skills will occur in content courses, including Science and Technology of Leadership, Total Quality System, Research in Technology, and Global Technology courses. Assessment may be

conducted via tests and examinations, assignments, projects, or original research papers. The instructor of each course will be responsible for assessing student outcomes using a rubric to ensure consistency across sections and years. Another direct measure of student learning will be the end-of-the-program certification of comprehensive knowledge which will involve students submitting written papers in which they apply the concepts, theories, and practices to a case study, as well as their oral and written communication skills. The committee for this assessment will be responsible for determining the level of each student's comprehensive knowledge about the program.

Indirect assessment measures include results of surveys of graduating students regarding the knowledge and skills they have gained in the program, as well as their perceptions of the graduate program. Employers of graduates of the program will be surveyed regarding the value of the program to their organizations. Specific items in the survey will include graduates' knowledge, skills, and attitude at their places of employment. The Coordinator of the program will be responsible for compiling the assessment report, sharing the report, and discussing the outcomes and the program's plans for continuous improvement with the graduate committee.

#### Program Assessment

Consistent with the Illinois Board of Higher Education (IBHE) staff requirements, the University will submit to the IBHE staff a progress report on the M.S. in Technology program at the end of the third year of operation. The report will summarize key areas of accomplishments and remaining challenges. In addition, the program faculty will participate in the University's eight-year program review process to assess the program using multiple measures to determine the program's strengths and weaknesses. Key factors that will be used in the assessment of this program will include evaluation of faculty teaching in the program, faculty research, grants, and contracts, as well as scholarship, awards and honors, retention and graduation rates of students, student performance in the certification of comprehensive knowledge requirements, and the level of alumni and employer satisfaction with the program. A summary of the program review, including the program's strengths and weaknesses, as well as steps to be taken to improve the program, will be submitted by the University to the IBHE with summaries of other programs reviewed in the same cycle.

#### **Facilities (space, equipment, instructional materials)**

*1050.30(a)(4): A) Facilities, equipment, and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support high quality academic work in the unit of instruction, research, or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research, or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research, and public service, are conveniently available and accessible, and can be maintained.*

Rolling Meadows High School, where instruction will be provided for students in the program, has all the necessary facilities, equipment, and instructional materials necessary for the M.S. in Technology program. This public school meets all local, state, and federal ordinances and laws, including the Americans with Disabilities Act (ADA) for use of an educational facility. The building has computer labs, technology labs, wireless connections in classrooms, as well as on-site technical support. Instructional equipment, such as teaching stations and projectors are standard equipment in high schools. The school districts have already agreed to provide

hardware and software resources and support for the teachers who will enroll in the proposed program to successfully complete the program. Students in the program may apply for a continuing education card with a library number for online access to the University's Booth Library, as well as the Illinois State Library System, which consists of 71 academic libraries. The card also has an identification barcode which allows access and privileges in the state wide library system. The Booth Library staff work with faculty and other libraries to ensure access to reserve materials.

When necessary, students and faculty have access to technical support as follows:

- access to WebCT or Blackboard, Turning Point, or Elluminate technical resources;
- online tutorials through the University's Center for Academic and Technology Support;
- appropriate training will be discerned through faculty evaluation and successful course objective completion;
- Citrix Server, an application server and software services package, which enhances application and data access over network and the Internet;
- the University's 24-hour Information Technology Services Helpline; and
- LiveText Assessment System, a flexible accreditation management system which provides colleges and universities advanced, complete, and web-based tools for developing, assessing, and measuring student learning.

These resources to support the proposed program are the same or functionally equivalent to the resources currently used to support the M.S. in Technology program offered on the University's campus. As summarized above, the extensive resources of Booth Library, as well as the resources of the Illinois State Library System, will be available to support the program.

## Library

All textbooks for the M.S. in Technology program will be available for students to pick up at the Textbook Rental Service, or they will be delivered to students at their off-campus class sites. While the University's students are not required to purchase textbooks for this program, they have the option to do so. Over ten textbooks will be used in the program, including *Introduction to Type in Organizations*, *Leadership: Enhancing the Lessons*, *Quality Management for Organizational Excellence*, *Publication Manual of the American Psychological Association*, *Technology and Society*, *Statistical Process Control & Quality Improvement*, *Product Design for Manufacture and Assembly*, *Operation Management*, *Multimedia Learning*, *Designing Usable Web Interfaces*, *Simulation Using Promodel*, and *Diffusion of Innovation*. Relevant academic journals in the discipline will be used to support the program, as is the case with the existing program offered on the campus. As summarized above, the extensive resources of Booth Library, as well as the Illinois State Library System, which consists of 71 academic libraries, will be available to support the program.

## **Faculty and Staff**

*1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research, or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research, or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.*

The cohort program will be taught by more than ten graduate faculty members with one doctor of education degree and nine Ph.D.'s. Some of the faculty members will also be responsible for the M.S. in Technology program offered on the University's campus. All graduate faculty members in the School of Technology meet or exceed established educational requirements to teach in the proposed program. Faculty evaluation involves the participation of the School Personnel Committee, the Department Chair, the Dean, the University's Personnel Committee, and the Provost. Over a period of years, positive evaluation may result in promotion, which carries a base salary increase and tenure. The number and qualifications of the ten faculty members are sufficient to support the proposed program and the existing master's in technology program.

Faculty who teach off-campus, such as faculty for the Master of Science in Technology program, also receive a travel stipend of \$350 to \$500, depending on the distance traveled. In addition to delivering the program, the faculty also will advise students, work with them to develop their study plans, and serve as mentors and research partners.

Support staff in the Office of Registration, the Business Office, Financial Aid, Booth Library, Textbook Rental Services, Counseling, and other departments will provide support services to all students enrolled at off-campus locations as they do for students enrolled on campus.

## **Fiscal and Personnel Resources**

*1050.30(a)(5): A) The financial commitments to support the unit of instruction, research, or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research, or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research, or public service are based upon supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.*

No new state resources are needed to establish the Master of Science in Technology program in the North Suburban Region. All costs will be offset by tuition and fees of students enrolled in the program.

The budget table submitted with this program's proposal show that expenditures for the program are projected to fluctuate between \$50,178 and \$75,267 during the first four years of the program's operation. These expenditures will include payments for supplies, services, and equipment. Projected expenditures for the program are relatively low because the proposed program will share resources, including faculty, with the existing program in technology offered on campus. Projected total resources that will be available to support this program significantly exceed expenditures during the four years. Total resources are projected to fluctuate from \$100,371 to \$160,456.

### **Accreditation and Licensure**

*1050.30(b)(3): Appropriate steps shall be taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.*

*1050.50 (a)(1) Three years after approval of a new program, the institution shall provide a program progress report to the Board as part of the institution's annual report. The third year progress report shall describe the institution's performance in meeting program objectives and show where any improvements are necessary. The placement of a program in voluntary temporary suspension will not negate the requirement of submitting a third year progress report.*

*1050.50 (a)(2)(C) Requirement for Programs in which State Licensure is Required for Employment in the Field: In the case of a program in which State licensure is required for employment in the field, a program can be found to be in good standing if the institution is able to provide evidence that program graduates are eligible to take the appropriate licensure examination and pass rates are maintained as specified in the objectives of the unit of instruction. If there is no such evidence, the institution shall report the program as flagged for review.*

There is no specialized accreditation for the master's degree program in technology. Certification for graduates of the program will not be necessary because admitted students will be certified school teachers.

### **Program Information**

*1050.30 (b)(2)(A) The information the institution provides for students and the public shall include the following: (i) An accurate description of the unit of instruction, including its objectives, length and residency requirements if any; (ii) Schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, and cancellation and refund policies; (iii) Student rights and responsibilities; (iv) A statement regarding the transferability of college credits, including the fact that the decision to accept transfer credits is determined by the receiving institutions; (v) A statement as to how the institution will advise students on the nature of the transfer process, including the importance of consulting with institutions to which the student may seek to transfer; (vi) Evidence of arrangements for the transfer of courses or credits or both to institutional counterparts, when these arrangements exist; these arrangements are also known as articulation agreements; (vii) A statement of the institution's most recent graduation rates as provided by the institution to the Integrated Postsecondary Education Data System (IPEDS); and (viii) Other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. (B) The information listed in subsection (b)(2)(A) shall be available to prospective students prior to enrollment and shall be included in the institution's catalog of programs.*

Information about the University's M.S. in Technology program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information, as well as University and Graduate School policies, will be published on the University's website, [www.eiu.edu](http://www.eiu.edu). Comparable information about the program will be published in the University's Graduate Catalog. Similar information may be obtained from the Graduate School and the School of Technology.

**Staff Conclusion.** The staff concludes that the Master of Science in Technology program proposed by Eastern Illinois University meets the criteria to implement the Board of Higher Education Act (110 ILCS 205) as set forth in the Board of Higher Education administrative rules (23 Ill. Adm. Code 1050.30), and the Illinois Board of Higher Education policies pertaining to assessment.

### **Illinois State University**

**Proposed Program Title:** Master of Science (M.S.) in Chemistry Education in the Central Region

*Projected Enrollments:* Illinois State University is projecting that enrollments in the proposed Master of Science (M.S.) in Chemistry Education program will consist of 12 students every year in the first five years of operation. The University has estimated that between four and eight degrees will be awarded in the program annually in the third year and beyond.

### **Background**

Illinois State University (ISU or University) requests authority to offer the Master of Science (M.S.) in Chemistry Education program in its home region, the Central Region. The proposed program will lead to a new professional master's degree, which provides a high level of conceptual knowledge and skills required for professional practice by graduates of the program that were not previously teachers of chemistry or science.

The program is designed for students who have earned baccalaureate degrees in chemistry who want to become well trained teachers of chemistry in high schools to meet crucial and on-going needs for highly qualified teachers of chemistry in the state and the nation. The University plans to offer the proposed program in addition to the Master of Chemistry Education designed for practicing teachers who have insufficient rigorous chemistry education coursework. These two programs will help the University meet the need for highly qualified teachers of chemistry education in high school. Many aspects of the proposed program and the newly approved Master of Chemistry Education are similar.

## Need

*1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.*

The field of chemistry education is an essential component of the scientific and technological development of students across the state and the nation. The proposed M.S. in Chemistry Education degree provides a mechanism by which the University can improve the teaching of chemistry in the P-20 spectrum. The method of delivering most courses for the program will be primarily via the Internet to make the program accessible to the state's chemistry teachers and other science teachers.

Increasing the knowledge and skills of mathematics and science teachers in their fields of specialization is a priority identified in studies and reports from the National Science Foundation (NSF), the U.S. Department of Education, the Illinois State Board of Education (ISBE), and the Illinois Board of Higher Education (IBHE), among others. To increase the number of students who complete degree programs for teacher educators in mathematics and sciences, the University applied for, and was awarded a \$1 million, No Child Left Behind federal grant to establish the proposed program and the Master of Chemistry Education program approved by the IBHE in December 2009. The establishment of this program is being accomplished with the collaboration of ISBE and IBHE staff members to meet the state's priority.

Two-thirds of the nation's K-12 teachers are expected to retire or leave the profession over the coming decade. According to the National Commission on Mathematics and Science Teaching for the 21<sup>st</sup> Century report of 2000, to fill the projected vacancies, there will be a need to hire over 200,000 middle and high school mathematics and science teachers. In its *American Competitiveness Initiative*, the Office of Science and Technology Policy indicated in 2006 that by 2015, there will be a need to employ 100,000 highly qualified teachers. In addition, the 2004 data from the National Center for Education Statistics (NCES) show that students in high-poverty schools are more likely to be taught science and mathematics by teachers who did not complete a major or minor in the subject they teach. Furthermore, Goldhaber and Brewer of the National Research Council (NRC) reported in their report "Evaluating the Effect of Teacher Degree Level on Educational Performance" that teachers' content knowledge, particularly in science and mathematics, is an important factor in determining student achievement.

This proposed program will contribute positively to addressing the documented need for highly qualified teachers of chemistry with a master's degree in the field.

## Comparable Programs in Illinois

Currently, there are two similar programs offered in Illinois by Southern Illinois University at Edwardsville (SIUE) and the University of Illinois at Urbana-Champaign (UIUC). However, neither of these programs includes a distinct combination of graduate coursework in chemistry, chemistry education, and science education with the classroom-based Action Research, which are all delivered via distance education.

## Mission and Objectives

*1050.30(a)(1): A) The objectives of the unit of instruction, research, or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research, or public service are consistent with what the unit title implies.*

The goals of the M.S. in Chemistry Education program are to recruit current science teachers who teach chemistry and improve their content knowledge and pedagogical skills to improve the chemistry knowledge of their students. At the completion of the program, graduates would have acquired knowledge, skills, values, disposition, and commitment necessary to improve their chemistry instruction, to help other fellow chemistry teachers improve their chemistry instruction, and to assume mid-level chemistry education leadership positions. The goals of this program are consistent and supportive of the mission of the Department of Chemistry, the College of Education, and the University.

Specific objectives of the proposed program are to:

- be conversant with the historical, philosophical, organizational, and current research issues in chemistry and science education;
- master and interpret current chemistry knowledge appropriate for the secondary school classroom;
- be committed to the continual education, growth, and understanding of all chemistry students;
- facilitate the success of other chemistry teachers through effective development and implementation of professional development opportunities for others;
- work successfully in chemistry teaching and leadership settings in secondary schools;
- develop and successfully complete a series of Action Research projects aimed at identifying strengths and weaknesses in classroom instruction and process of continual improvement; and
- assess, evaluate, and improve chemistry education in secondary schools.

Each of the objectives above will be achieved through one or more required courses for the program.

## Curriculum and Assessment

*1050.30(b)(1): A) The caliber and content of the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives, and appropriate academic record keeping.*

*1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research, or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.*

## Admission Requirements

To be admitted to the proposed program, an applicant must 1) have at least a 2.8 grade point average (GPA) on a 4.0 scale for the last 60 hours of undergraduate work in chemistry or a closely related field; and 2) hold or be eligible for a valid certificate to teach science or mathematics. An international student applicant must obtain a Test of English as a Second Language (TOEFL) score of 600 (250 for the computer-based testing).

## Curriculum

The curriculum of the proposed program consists of at least 33 semester hours of coursework in four areas: Chemistry Content, Chemistry Education, Foundational Science Education, and Action Research. Another requirement is that the student will complete the capstone classroom Action Research project course. The chemistry content consists of nine hours from courses such as Analytical Chemistry, General Biochemistry, Inorganic Chemistry, Topics in Contemporary Chemistry, and Topics in Inorganic Chemistry. The Chemistry Education component consists of nine hours from Advanced Chemistry: Curriculum & Pedagogy, Leadership in Chemistry Education, and Developing Practices in Chemistry Education. The Science Education component comprises nine semester hours from three of the following four courses: Instructional Media and Technology, Curriculum in Science Education, Recent Research in Science Education, and Instructional Strategies for School Science. The Action Research component has six credits from Professional Research I and II. Courses are to be taken sequentially with a purposeful, prescribed progression through the program. Each course builds on prerequisite classes with foundational courses taken first, to provide knowledge, skills, and abilities necessary for success. The prerequisites listed for courses in the catalog explain and support the concept that knowledge and learning in this degree program will be cumulative.

A thesis is not a requirement for this program. Instead, a six semester hour Action Research project is required. Essential attributes of the Action Research project are:

### Capstone Action Research Project

The Capstone Action Research Project course will focus on the rationale, issues, and implications of the current teacher research movement within education and on the research strategies and techniques that can be used by teachers in conducting research in their own classroom settings. The current teacher research movement is recognizing that teachers can be researchers in their own classroom settings, both to add to their own understandings about teaching and learning, and to contribute to the broader field of education. This course is a synthesizing experience, bringing together all that is learned from previous coursework and the Action Research project.

The course will discuss the theoretical foundation of teacher research, *i.e.*, why teacher research is important to teachers and to the broader field of education. It will also explore various research strategies used in qualitative and ethnographic research, but with specific focus on the issues and adaptations involved when teachers in their own classrooms use these strategies. Issues of data collection, data analysis, research design, and presenting findings both orally and in writing will be addressed.

This capstone course is designed as a collaborative, critical examination of students' research. The class depends on students' joint willingness to read and discuss, ask questions, try out research strategies, and critically analyze research methodologies. The instructor's goal is that the participants in this seminar become part of a strong working community, which supports both group and individual goals. Evaluation of each student's report will be based on many factors, including the literature review, research questions, the Research Action Plan, input from the Institutional Review Board, completion of the report, and an oral presentation.

#### Assessment of Student Learning Outcomes

Assessment of student learning outcomes in the proposed program will be accomplished to determine if each student has mastered both the theoretical and practical knowledge and skills necessary to be an effective chemistry teacher. This will be measured in a number of ways, including:

- pre-and post-test assessment to determine if the student has learned and can interpret current chemistry knowledge appropriate for the secondary chemistry classroom;
- alumni surveys administered one and five years after graduation;
- monitoring student grades and GPAs, retention rates, and time-to-degree completion;
- evaluating the quality of students' Action Research projects;
- conducting surveys of employers of alumni to determine graduate success in the profession; and
- monitoring the results of student evaluation of courses for the program.

#### Program Assessment

The M.S. in Chemistry Education program will be regularly evaluated by the program faculty and others from outside the Chemistry Department (the Department). The evaluation will consist of many measures, including student evaluation of courses taught, and the ability of the Department, including this program, to maintain the existing accreditation and be reaccredited by the American Chemical Society's Committee on Professional Training (CPT).

Consistent with IBHE staff requirements, the University will submit a progress report on behalf of the proposed program at the end of the third year of operation. The report will summarize key areas of accomplishment and challenges that remain to be addressed. As other degree programs at the University have done, the program faculty will participate in the University's eight-year program review process to assess the program using multiple indicators to determine program strengths and weaknesses. Factors that will be considered in the assessment will include retention and graduation rates, percentage of students involved in faculty research and other projects, the level of alumni and employer satisfaction with the program, percentage of graduates employed in chemistry education, and career advancement achieved by graduates. A summary of the program review, including the program's strengths and weaknesses, as well as steps that will be taken to improve the program, will be submitted to the IBHE with summaries of other programs reviewed in the same cycle.

## Facilities (space, equipment, instructional materials)

*1050.30(a)(4): A) Facilities, equipment, and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support high quality academic work in the unit of instruction, research, or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research, or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.*

No new facility is needed for the proposed program because the program will use the recently renovated Julian Hall and the Science Laboratory Building, which houses the Department. It is expected that the needs of students in the proposed M.S. in Chemistry Education program will be fully met by the Department of Chemistry and the Department of Curriculum and Instruction.

### Library

The University's Milner Library (the Library) has extensive holdings, including books, and text and e-journals to support the chemistry content, chemistry education, curriculum, and instruction courses for the proposed program. The Library subscribes to several important research databases and recourses, notably *SciFinder*, *MedLine*, *Cambridge Structural Database*, and the online *CRC Handbook of Chemistry and Physics*. The Library subscribes to 121 chemistry journals either in print, print/online, or online only. As the chemistry periodical holdings gradually shift from print to electronic holdings, students and faculty gain increasingly convenient and rapid access to a heavily used resource. This is particularly important for students registered in online chemistry courses. Although constantly under budget pressure, the Library has worked to enhance collections that support students in chemistry and science teacher education programs. Should a need for additional library resources arise in the future, it will be met by the Department of Chemistry or the University.

### Technology and Instructional Resources

Instructors interacting with students in the program via distance education will use the facilities of the Chemistry Department, along with the Curriculum and Instruction Department resources, as well as the facilities of the Classroom Technology Support Services (CTSS). CTSS maintains a full video conferencing service for faculty and staff at the University using IP Videos for video conferencing and distance education applications.

No additional computer resources are needed for the proposed degree program because recapitalization of faculty computers is current through 2005-vintage systems. That is, no faculty members have computers that are more than four years old, and the Department expects to maintain them in good condition. In addition, all computers in the primary computer lab for students in the Science Laboratory Building have been replaced as of June 2009, and it is expected that up-to-date computing equipment will be available to students in all degree programs in the foreseeable future.

The University employs full-time local area network administrators, who provide technical support to faculty teaching web-assisted and distance education courses. Several offices on the University's campus provide support for faculty developing and teaching distance education courses. For example, the Center for Teaching and Learning Technology (CTLT) provides instructional technical assistance to faculty in the use of technology for instruction, research, and other professional activities. The programs offered by CTLT include distance education training programs, computer short courses, and web-based training courses.

### **Faculty and Staff**

*1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research, or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research, or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.*

Currently one full-time faculty member in the Chemistry Department (the Department) coordinates all chemistry teacher education programs at the University, and teaches three of the required courses. In addition, 19 other faculty members in the Department are available to teach the rest of the required chemistry content courses for the proposed program as part of their assigned instructional workload. The same faculty members are responsible for the Master of Chemistry Education program, which has much in common with the proposed program.

The Department currently supports three on-going part-time academic advisors for undergraduate and graduate programs. The Department also has three full-time support staff that work with admission applications, program administration, notification, along with related correspondence between chemistry graduate students in other chemistry programs. These staff members will be available to support the proposed program.

Qualification requirements to teach courses for the proposed program include a terminal degree in an appropriate field, ability to support the mission of the Department and College, and the ability to teach effectively and conduct scholarly work. Faculty members are evaluated annually regarding the quality of their performance in teaching, research, and service. Allocation of salary raises is based on their performance, along with consideration of equity.

### **Fiscal and Personnel Resources**

*1050.30(a)(5): A) The financial commitments to support the unit of instruction, research, or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research, or public service are based upon supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.*

No new state resources are needed to establish the proposed program. The budget for the proposed program is estimated to be \$75,200 in each of the first three years and \$67,700 in the fourth year. These costs will be met by reallocating existing resources, which will include tuition paid by students admitted to the proposed program. These funds should be sufficient to support the proposed program because this program will share resources with other programs in the Department of Chemistry, the Department of Curriculum and Instruction, as well as the Master of Chemistry Education program approved by the IBHE in December 2009.

### **Accreditation and Licensure**

*1050.30(b)(3): Appropriate steps shall be taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.*

*1050.50 (a)(1) Three years after approval of a new program, the institution shall provide a program progress report to the Board as part of the institution's annual report. The third year progress report shall describe the institution's performance in meeting program objectives and show where any improvements are necessary. The placement of a program in voluntary temporary suspension will not negate the requirement of submitting a third year progress report.*

*1050.50 (a)(2)(C) Requirement for Programs in which State Licensure is Required for Employment in the Field: In the case of a program in which State licensure is required for employment in the field, a program can be found to be in good standing if the institution is able to provide evidence that program graduates are eligible to take the appropriate licensure examination and pass rates are maintained as specified in the objectives of the unit of instruction. If there is no such evidence, the institution shall report the program as flagged for review.*

The Department of Chemistry, which will administer the proposed program, is accredited by the American Chemical Society (ACS). It is expected that the M.S. in Chemistry Education program will be included among the Department's programs currently accredited by the ACS. Students admitted into the program will be certified teachers.

### **Program Information**

*1050.30 (b)(2)(A) The information the institution provides for students and the public shall include the following: (i) An accurate description of the unit of instruction, including its objectives, length, and residency requirements if any; (ii) Schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, and cancellation and refund policies; (iii) Student rights and responsibilities; (iv) A statement regarding the transferability of college credits, including the fact that the decision to accept transfer credits is determined by the receiving institutions; (v) A statement as to how the institution will advise students on the nature of the transfer process, including the importance of consulting with institutions to which the student may seek to transfer; (vi) Evidence of arrangements for the transfer of courses or credits or both to institutional counterparts, when these arrangements exist; these arrangements are also known as articulation agreements; (vii) A statement of the institution's most recent graduation rates as provided by the institution to the Integrated Postsecondary Education Data System (IPEDS); and (viii) Other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. (B) The information listed in subsection (b)(2)(A) shall be available to prospective students prior to enrollment and shall be included in the institution's catalog of programs.*

Information about the University's M.S. in Chemistry Education program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information, as well as University and Graduate School policies, will be published on the University's website, [www.ilstu.edu](http://www.ilstu.edu). Comparable information about the program will be published in hard copy in the University's graduate catalog. Similar information may be obtained from the Department of Chemistry, the College of Education, or the Graduate School.

**Staff Conclusion.** The staff concludes that the Master of Science in Chemistry Education program proposed by Illinois State University meets the criteria to implement the Board of Higher Education Act (110 ILCS 205) as set forth in the Board of Higher Education administrative rules (23 Ill. Adm. Code 1050.30), and the Illinois Board of Higher Education policies pertaining to assessment.

### **University of Illinois at Chicago**

**Proposed Program Title:** Master of Arts in the Teaching (MAT) of Spanish in the Chicago Region

*Projected Enrollments:* The University of Illinois at Chicago has projected that enrollments in the proposed Master of Arts in the Teaching (MAT) of Spanish program will grow from ten students in the first year to 30 students in the third year. It is estimated that approximately ten degrees will be awarded annually in the second year and beyond.

### **Background**

The University of Illinois at Chicago (UIC or University) requests authority to offer the Master of Arts in the Teaching (MAT) of Spanish program in its home region, the Chicago Region, for teachers who already have state certification in Spanish and who are currently teaching in K-12 classrooms, as well as for recently certified teachers who seek graduate studies in the field soon after graduation. The proposed program is designed to raise the level of professional training of primary and secondary school educators in their chosen field of specialization, Spanish, so that in turn they can better prepare their students for the challenges and opportunities afforded to them in the global context in the City of Chicago. Graduates of the program are expected to acquire expertise in the fundamentals of literary and linguistic studies, second language teaching of Spanish, literacy strategies for second language and heritage learners, teaching methods, and assessment of student learning in the field.

The University has significant investments in degree programs related to Spanish and Latino cultures. Currently, the University offers six degree programs in the discipline: Bachelor's programs in Latin and Latino Studies, Teaching of Spanish, and Spanish-Economics; a master's in Hispanic Studies; and a Ph.D. in Hispanic Studies. The proposed program will build upon the successes of these programs.

The University has documented need for the program based on the results of two of its surveys, requirements of the Chicago Public Schools (CPS) for foreign languages for high school students, and recommendations of the U.S. Department of Education, along with the growing number of Latinos in the Chicago metropolitan area.

## **Need**

*1050.30(a)(6): A) The unit of instruction, research, or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research, or public service meets a need that is not currently met by existing institutions and units of instruction, research, or public service.*

The proposed MAT program will meet regional and state needs and priorities by offering advanced content instruction to certified teachers of Spanish at both the K-8 and 9-12 grades. While Illinois does not require foreign language for high school graduation, the U.S. Department of Education highly recommends two years of foreign language, particularly for college-bound students. In the immediate geographic area, the CPS District mandates a minimum of two years of study of a foreign language for all high school students, thus creating an evident need for teachers who have developed their teaching skills beyond the fundamentals of the initial teacher certification. Moreover, in response to parent demand, school districts regionally and statewide, including CPS, are substantially growing their world languages programs in grades K-8 in order to better prepare students for high school and beyond. High school Spanish teachers teach both literature and language. Thus, some of them seek advanced knowledge in both fields, as well as in current educational practices. As a result of these needs, well-trained Spanish teachers are necessary to meet the demands of local public schools.

In addition to meeting the needs of the CPS and recommendation of the U.S. Department of Education, documentation of the need for the proposed MAT program was obtained from multiple inquiries for the program from certified high school Spanish teachers and the results of two surveys conducted by the Department of Spanish, French, Italian, and Portuguese in 2007 and 2008. The documentation indicated significant need for the program, in part because there is currently no such program offered in the Chicago area. These assessments contributed to the University's projection that approximately 30 students or more will enroll in the program annually in the third year of operation and beyond.

Although the University already offers the Master of Arts in Hispanic Studies, that program's targeted student population are those who wish to expand their theoretical knowledge base in preparation for research doctoral degrees in Spanish and related areas. As a practitioner teaching degree, the purpose of the MAT program is to expand and solidify upon the knowledge, skills, and disposition acquired from the undergraduate certification program by taking more advanced Spanish courses and other relevant courses at the College of Education.

## **Comparable Programs in Illinois**

Currently, no MAT program in the Teaching of Spanish is offered in the Chicago Region. However, four universities in the region, Saint Xavier University, National-Louis University, Northeastern Illinois University (NEIU), and Chicago State University (CSU) offer related but distinctly different programs from the MAT program. Saint Xavier University's program is not designed for practicing certified teachers. National-Louis University's program is designed for aspiring middle and secondary school teachers and certified practicing teachers. However, the program is offered by the College of Education, not the Department of Spanish, French, Italian, and Portuguese, and therefore does not offer advanced training in the subject area. NEIU's program focuses on literature, not the teaching of Spanish. CSU's M.S.Ed. in Curriculum and Instruction has a concentration in Secondary Education and its courses are offered by the College of Education. The program is not tailored for certified teachers of Spanish as is the proposed MAT program.

## **Mission and Objectives**

*1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.*

The primary goal of the Master of Arts in the Teaching of Spanish program is to provide advanced education and training in the areas of literature, cultural studies, linguistics, and education for certified practicing teachers of Spanish in the Chicago Region. The MAT program will offer an optional concentration in the Teaching of Spanish to Heritage Speakers with bilingual backgrounds. Prior to completion of the program, all students in the program will successfully complete a required comprehensive examination. The program will build upon six existing programs related to Spanish offered by the University at the baccalaureate, masters, and doctoral levels. The goals and objectives of the program are consistent with, and support the mission of the Department, the College of Liberal Arts and Sciences, and the University.

## **Curriculum and Assessment**

*1050.30(b)(1): A) The caliber and content of the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives, and appropriate academic record keeping.*

*1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research, or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.*

## **Admission Requirements**

Applicants for the MAT program will be considered on an individual basis. In addition to the Graduate College requirements, each applicant must meet a number of requirements, including:

- holding a bachelor's degree in Spanish or a closely related field with a minimum grade point average (GPA) of 3.5 on a 4.0 scale in the final 60 semester hours in the undergraduate program;
- possessing a current Illinois Type 03, Type 09, Type 10, or Type 29 Illinois certification;
- taking and submitting the Graduate Records Examination (GRE) scores;
- giving evidence of proficiency in spoken and written Spanish;
- earning a minimum TOEFL score of 550 paper-based; 213 computer-based; 80, with sub-scores of Reading 19, Listening 17, Speaking 20, and Writing 21 on the new Internet-based exams;
- submitting at least one sample of written work in Spanish in the form of an essay for an academic course;

- submitting three letters of recommendation from professors or supervisors in a teaching position, including one from a professor in an upper-level or graduate Spanish course; and
- submitting a personal statement of 300 words in which the applicant addresses his or her reasons for applying to the program.

## Curriculum

The primary objectives of the MAT program are to prepare its graduates to evidence a master's level ability in 1) the analysis of Hispanic literary text and cultural products; 2) the interpretation of theories in second language acquisition; 3) the identification and critique of best practices in communicative language teaching; 4) the comparison of dialectal variations of Spanish around the world and in the United States; and 5) the identification of strategies to develop high levels of literacy in K-8 or 9-12 classrooms. In addition, students who choose to complete the Concentration in the Teaching of Spanish to Heritage Speakers will evidence the ability to analyze and interpret basic concepts in the field of Latino cultural studies, as well as sociolinguistic variations. Also, they will be able to identify and critique best practices in teaching Spanish to heritage speakers. Furthermore, candidates for the degree will be encouraged to explore concrete ways in which concepts presented in courses can be incorporated into their teaching practice in their own classrooms, such as how to introduce analytical concepts to high school students in a foreign language classroom.

The curriculum of the program consists of 36 semester hours that must be taken in the Department of Spanish, French, Italian, and Portuguese, the Latin American and Latino Studies Program, the Department of English, and the College of Education. No more than eight semester hours will be accepted as transfer credits. Four required core courses at the 400- and 500-levels consisting of a total of 16 hours must be completed by every student in the program: Intensive Introduction to Hispanic Linguistics, Methods of Literacy and Cultural Analysis, Second Language Learning, and Foundations of Literacy Instruction in K-8, or Secondary Literacy. The remaining 20 hours (5 courses) must be selected from four groups of courses: Group One: Literature and Latin American/Latino Cultures; Group Two: Linguistics, Language Policy, and Teaching; Group Three: Latin American and Latino Studies; and Group Four: Education. Of those five courses, three must be Spanish courses, and at least one course taken from a specified list of Group Two and Group Four courses, with at least one course from Group Four. The curriculum for students who select the concentration in Teaching of Spanish to Heritage Speakers includes completion of five courses chosen from four groups with specified courses in Groups Two and Three and at least one course from Group Four.

Every student must successfully complete the required comprehensive examination, which may include a teaching portfolio and take-home essay questions. The examination will be designed to test the students' knowledge base in Spanish content areas in relation to their pedagogical and methodological strategies in the K-8 and/or 9-12 classroom.

## Assessment of Student Learning Outcomes

Assessment of student learning outcomes will be accomplished on a course per course basis through the requirements stipulated by the faculty member teaching each course for the program. These may include examinations, research papers, and field studies. Each student's overall progress will be monitored by the student's assigned faculty advisor, as well as by the Department's graduate committee members, who reviews each student's performance via grades and other faculty reports. Upon nearing completion of the program, a comprehensive examination will be required. Other assessment measures that will be used by the program include student grades in each course, graduation rates, and time-to-degree completion. The outcomes of the assessment will be used to improve the program.

## Program Assessment

Consistent with the Illinois Board of Higher Education (IBHE) staff requirements, the University will submit to the IBHE staff a progress report on the MAT program at the end of the third year of operation of the program. The report will summarize key areas of accomplishments and remaining challenges. In addition, the program faculty will participate in the University's eight-year program review process to assess the program using multiple measures to determine the program's strengths and weaknesses. Key factors that will be used in the assessment of this program include evaluation of faculty teaching in the program, faculty research, grants, and contracts, as well as scholarship, awards and honors to faculty, an examination of course content and student grade distribution by the Graduate Studies Committee, retention and graduation rates of students, the result of exit surveys of students who have completed the program, the level of alumni and employer satisfaction with the program, and the percent of graduates employed as teachers of Spanish. A summary of the program review, including the program's strengths and weaknesses, as well as steps to be taken to improve the program, will be submitted by the University's Office of the Vice President for Academic Affairs to the IBHE staff with summaries of other programs reviewed in the same cycle.

## **Facilities (space, equipment, instructional materials)**

*1050.30(a)(4): A) Facilities, equipment, and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support high quality academic work in the unit of instruction, research, or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research, or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research, and public service, are conveniently available and accessible, and can be maintained.*

It is reported in the program application that the University currently has in place all the facilities and equipment necessary to support the proposed program, particularly since the beginning of Fall 2009 when Lincoln Hall was outfitted with smart classrooms. In addition, the University's Language and Culture Center in Grant Hall regularly provides training on multiple platforms on language teaching related software. Some of the extensive resources that currently support six existing degree programs related to Spanish at the University may be used to support the MAT program as needed.

## Library

The University's library staff estimates that it currently spends approximately \$120,000 per year on resources that support work in Spanish and Curriculum and Instruction, the principal areas from which courses for the MAT program are derived. Faculty from the Department of Spanish, French, Italian, and Portuguese, the Department of Curriculum and Instruction, and the library faculty have determined that current library resources, including books and journals, are adequate to support the MAT program, so no additional funding is necessary for the proposed program.

## Technology and Instructional Resources

The technology and instructional resources currently used to support the six existing degree programs related to Spanish, as well as resources from the Department of Curriculum and Instruction, are current, adequate, and appropriate to support the MAT program.

## Faculty and Staff

*1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research, or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research, or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.*

Current faculty members and staff that support the University's Master of Arts in Hispanic Studies will be responsible for the proposed MAT program. The same qualified faculty members will teach courses for the MAT program, and the departmental graduate secretary will provide administrative support to students in the proposed program, as is the case for current students in the existing M.A. and Ph.D. in Hispanic Studies and M.A. in French. Additional faculty support may be provided by the Department of Curriculum and Instruction as needed. The MAT program students will be advised by the Director of Teaching of Spanish, who serves as the liaison with the College of Education for teacher education programs.

## Fiscal and Personnel Resources

*1050.30(a)(5): A) The financial commitments to support the unit of instruction, research, or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research, or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research, or public service are based upon supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.*

No new state resources are requested to establish the Master of Arts in the Teaching of Spanish program. According to the proposal, the budget for the program will be minimal because the University's existing resources, including faculty and staff, facilities, library resources, and

instructional resources to support the proposed program are already available at the University in sufficient number and quality. Only \$6,333 in each of the first four years is identified as targeted funds needed to support the MAT program, an addition to existing resources. The targeted funds will be for personal services for the MAT student advisor.

The proposed program requires no additional full-time faculty members or lecturers. All courses needed for the program are part of the M.A. in Hispanic Studies program, and the courses will be offered on a rotation basis. The courses will be offered regardless of the approval of the MAT program. Offering the proposed program will boost enrollments in the Department's 400- and 500-level courses and will lead to the graduation of about ten students annually in the third year and beyond at no significant additional resource investments made by the Department or the University.

### **Accreditation and Licensure**

*1050.30(b)(3): Appropriate steps shall be taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.*

*1050.50 (a)(1) Three years after approval of a new program, the institution shall provide a program progress report to the Board as part of the institution's annual report. The third year progress report shall describe the institution's performance in meeting program objectives and show where any improvements are necessary. The placement of a program in voluntary temporary suspension will not negate the requirement of submitting a third year progress report.*

*1050.50 (a)(2)(C) Requirement for Programs in which State Licensure is Required for Employment in the Field: In the case of a program in which State licensure is required for employment in the field, a program can be found to be in good standing if the institution is able to provide evidence that program graduates are eligible to take the appropriate licensure examination and pass rates are maintained as specified in the objectives of the unit of instruction. If there is no such evidence, the institution shall report the program as flagged for review.*

There is no specialized accreditation for the MAT program at this time. The University's existing accreditation by the Higher Learning Commission (HLC) will extend to the MAT program when it is approved by the IBHE. No additional licensure is required for graduates of this program by the State of Illinois.

### **Program Information**

*1050.30 (b)(2)(A) The information the institution provides for students and the public shall include the following: (i) An accurate description of the unit of instruction, including its objectives, length and residency requirements if any; (ii) Schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, and cancellation and refund policies; (iii) Student rights and responsibilities; (iv) A statement regarding the transferability of college credits, including the fact that the decision to accept transfer credits is determined by the receiving institutions; (v) A statement as to how the institution will advise students on the nature of the transfer process, including the importance of consulting with institutions to which the student may seek to transfer; (vi) Evidence of arrangements for the transfer of courses or credits or both to institutional counterparts, when these arrangements exist; these arrangements are also known as articulation agreements; (vii) A statement of the institution's most recent graduation rates as provided by the institution to the Integrated*

*Postsecondary Education Data System (IPEDS); and (viii) Other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. (B) The information listed in subsection (b)(2)(A) shall be available to prospective students prior to enrollment and shall be included in the institution's catalog of programs.*

Information about the University's Master of Arts in the Teaching of Spanish program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information, as well as University and Graduate School policies, will be published on the University's website, [www.uic.edu](http://www.uic.edu). Comparable information about the program will be published in the University's Graduate Catalog. Similar information may be obtained from the Graduate College and the Department of Spanish, French, Italian, and Portuguese.

**Staff Conclusion.** The staff concludes that the Master of Arts in the Teaching of Spanish program proposed by the University of Illinois at Chicago meets the criteria to implement the Board of Higher Education Act (110 ILCS 205) as set forth in the Board of Higher Education administrative rules (23 Ill. Adm. Code 1050.30), and the Illinois Board of Higher Education policies pertaining to assessment.

### **Western Illinois University**

**Proposed Program Title:** Master of Science (M.S.) in Biology in the Chicago Region

*Projected Enrollments:* Western Illinois University has projected that enrollments in the proposed Master of Science (M.S.) in Biology program will grow from approximately ten students in the first year to approximately 16 students in the fifth year, consisting of both full-time and part-time students. It has estimated that approximately two degrees will be awarded in the first year and four degrees will be awarded annually in the third year and beyond.

### **Background**

Western Illinois University (WIU or University) requests authority to offer the Master of Science (M.S.) in Biology with an emphasis in Zoo and Aquaria Studies at the Shedd Aquarium in the Chicago Region. The program is designed to prepare its students for highly competitive careers in zoos and aquariums. The program has several objectives, including knowledge and skills about the biology of special groups of animals often kept in captivity, background in the basic concepts and techniques of animal training, practical management skills, information on policies and regulations about the operation of zoos and aquaria, and practical, hands-on experience for working with animals and personnel. The program will build upon the strengths of the University's existing B.S. and M.S. in Biology programs, which enrolled 531 and 72 students respectively in Fall 2008. The requirements for the proposed program are the same as the requirements for the existing M.S. in Biology program. The existing program has been offered by the University at the Macomb Campus for nearly 50 years.

Courses for the program will be offered at the Shedd Aquarium site for face-to-face instruction and via a two-way audio and video format for those at other locations. In 1991, the biology faculty began offering biology graduate level courses at the Shedd Aquarium in Chicago. In 2000, the biology faculty recognized that many students want careers at zoos or aquaria and the University developed the Post Baccalaureate Certificate in response to the expressed needs. The partnership between the University and the Shedd Aquarium has been successful, and it is expected that with the addition of the proposed new program to be offered at the Aquarium, the

partnership will be even more successful in achieving its goals and objectives. Making the M.S. in Biology program available at the Shedd Aquarium will provide students with an excellent opportunity to take courses, obtain internships, and conduct thesis research in a unique setting, thereby giving graduates of the programs a competitive edge in what is a highly competitive career field.

## **Need**

*1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.*

The proposed degree program responds to the occupational need in the zoo and aquarium industry to provide advanced education and training for zookeepers and aquarists. The curriculum for the M.S. in Biology program at the Shedd Aquarium will prepare zoo and aquarium employees for positions as well-educated and trained professionals, ultimately resulting in healthier animals and more professional exhibits and programs, which will increase attendance at zoos and aquaria.

According to the American Association of Zoos and Aquariums (AZA), entry level positions require at least a bachelor's degree. The International Marine Animal Trainer's Association (IMATA) states that "a degree will enhance your knowledge and understanding of your career. There are numerous facilities that are unwilling to hire those without a degree or a degree in progress." Advanced or managerial positions require post-baccalaureate work either through a master's degree or a post-baccalaureate certificate program. The University has indicated that it plans to establish the Post-Baccalaureate Certificate in Biology at the Shedd Aquarium in the near future.

According to the AZA, zookeepers and aquarists "provide direct care for animals through feeding, cleaning, enrichment, training, monitoring animal health, and educating visitors. Other animal care jobs include curators, veterinarians, veterinary technicians, and research scientists." Graduates of the proposed program and similar programs also find jobs in wildlife rehabilitation, dog training, horse training, natural history, and science museums.

The proposal for this program indicates that many prospective biology students attending orientation at the University state that they are interested in a career in marine biology or as dolphin trainers. However, interests in such careers exceed available training programs. The stiff competition for the best training programs is underscored by the result of a survey conducted by the Society for Marine Mammalogy, which documented that there are only 35 universities worldwide that offer graduate programs in marine mammal science. Currently, Illinois has about 20 zoos or aquaria. However, the closest zoo or aquarium to the Macomb area is about four hours away and about two hours away from the University's Quad Cities Campus. The opportunity of the University's graduate students to take courses, obtain internships, and conduct thesis research at the Shedd Aquarium is a unique asset to the University's students and to the state.

Even before the proposed program is established, many graduates of the University's master's program in biology obtained professional jobs at many organizations including the Shedd Aquarium, SeaWorld, Bush Gardens, Minnesota Zoo, Dolphin Quest in Hawaii, San Diego Wild Animal Park, Mirage Dolphin facility in Las Vegas, Lincoln Park Zoo, Duke Primate Center, and Brookfield Zoo. Examples of career advancements by graduates of the University's existing program offered on the campus include: from Volunteer to Marine Mammal Trainer with Dolphin Quest in Hawaii to Head Trainer at Mirage Dolphin facility at Las Vegas; from Volunteer to Assistant Director of Education at the Shedd Aquarium to Vice President for Education at Lincoln Park; from Volunteer to Marine Mammal Trainer to Director of Public Educational Programs at the Shedd Aquarium; and from Volunteer to Laboratory Assistant in Endocrinology at Lincoln Park Zoo to Laboratory Manager in Endocrinology at the University of Chicago.

### **Comparable Programs in Illinois**

Currently, there are no similar master's degree programs in Illinois that concentrate their training on careers at zoos and aquariums. Nationally, only three programs related to the proposed program are offered by the University of Wisconsin at Stevens Point, George Mason University in Virginia, and Michigan State University at East Lansing.

### **Mission and Objectives**

*1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.*

The objectives of the M.S. in Biology program are to provide its students with 1) an adequate graduate level knowledge base in eight core areas of biology: biometrics, ecology, genetics, evolution, physiology, molecular biology, organismal biology, and systemic; 2) the ability to function in a biological research setting; and 3) competency as biologists. Graduates of the program will be prepared for a broad spectrum of career opportunities at colleges and universities, primary and secondary schools, governmental agencies, private conservation groups, science museums, zoos, aquaria, parks, and nature centers, among others. The above objectives of the program are consistent and supportive of the mission of the Department of Biological Sciences, the College of Arts and Sciences, and the University.

### **Curriculum and Assessment**

*1050.30(b)(1): A) The caliber and content of the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.*

*1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.*

## Admission Requirements

Applicants for admission to the M.S. in Biology program must have earned a bachelor's degree with work in biological sciences recognized as adequate by the Department's Graduate Committee. Departmental admission to the program may be contingent of an applicant making up all undergraduate deficiencies. All incoming students are expected to have successfully completed three semesters of chemistry (including organic chemistry or biochemistry) and two semesters each of physics or geology (any sequence), and mathematics. Also required for admission are three semesters of introductory biology (one each in zoology, botany, and microbiology), plus a semester each of genetics, ecology, physiology, cell biology, and the University's undergraduate biology requirements as determined by the Department's Graduate Committee. Although the Graduate Record Examination (GRE) scores are not required, applicants are encouraged to submit GRE scores for both the General Test and the Subject Test in Biology prior to admission to the program. Additionally, admission to the program will be dependent upon the following: a minimum grade point average (GPA) of 2.75 on a 4.0 scale or a minimum GPA of 3.0 on a 4.0 scale in the last two undergraduate years, three letters of recommendation, and a written statement on the student's interest in the program and his or her career goals.

## Curriculum

The curriculum for the M.S. in Biology program consists of a minimum of 32 semester hours of graduate level coursework, of which nine hours are from a three course core requirement that every student must complete to earn the degree. In addition, four to ten semester hours must be in courses for literature and research. Elective courses will consist of 13 to 19 semester hours. The three required core courses are in Biometrics, Molecular Applications in Organismal Biology or Molecular Biology of Genes, and Biosystematics and Evolution. Students who select the Thesis Plan will complete 13 semester hours of elective coursework in biology, botany, microbiology, or zoology and ten semester hours of literature in biology and research coursework. The Non-Thesis Plan requires students to complete 19 semester hours in biology, botany, microbiology, and zoology, and four hours of literature in biology and biological research. The Thesis Plan is designed for students aspiring to a Ph.D. degree and the Non-Thesis Plan is for students seeking the terminal master's degree. While each student who selects the Thesis Plan must complete an original research based on the requirements of the Department and the Graduate School, those who select the Non-Thesis Plan must complete an advanced biological project in accordance with the requirements of the Department. Every thesis and non-thesis student must present in a seminar and must pass an oral examination on the thesis or the project.

As established by the AZA, one of the goals of zoo or aquarium studies is research. The University's partnership with the Shedd Aquarium provides a unique opportunity for graduate students to conduct research for their theses. Through this collaboration, 32 master degrees have been successfully completed. Their thesis research has been conducted on many subjects on hearing, vocal behavior, behavioral enrichment, standards of care, and curriculum development in a zoo setting, among others. The species studied include Pacific white-sided dolphins, belugas, pygmy marmosets, and sea otters at the Shedd Aquarium.

Current and past University students have conducted thesis research on California sea lions, harbor seals, sable antelope, and tigers at other Chicago area zoos, such as Brookfield Zoo and Lincoln Park Zoo. Some students in the existing program have chosen to conduct field studies on bats, insects, and turtles in Illinois; striped dolphins in the Mediterranean Sea; bottlenose dolphins in North Carolina; and Mediterranean monk seals in Greece. It is expected that when the proposed program is approved, the research outcomes of its graduates will be similar to those summarized above.

#### Assessment of Student Learning Outcomes

Student learning outcomes in the program will be assessed to determine the extent to which the objectives of the program are met by making students demonstrate:

- basic knowledge in biology of animals, plants, and microbes;
- detailed knowledge about a specialized group of organisms or specialized area of study;
- ability to design a research study, collect appropriate data, statistically analyze the data, and write up the findings and conclusions consistent with standards in the discipline;
- ability to understand and critique biological literature related to a specific study area; and
- effective communication in oral and written formats.

Specific assessment tools that will be employed include tests, papers, examinations, including the final oral examination at the end of the program, research projects, seminar presentation of projects or the thesis, and other appropriate evaluations of student learning. Each student will take a pre-test and post-test assessment at the beginning and at the end of the program. The assessment data compiled will be compared for consistency among the three on campus and off campus locations: Macomb Campus, Quad Cities Campus, and at the Shedd Aquarium. Some of the results of the assessment will be used to improve the program.

#### Program Assessment

Consistent with the Illinois Board of Higher Education (IBHE) requirements, the University will submit to the IBHE staff a progress report on the M.S. in Biology program in the Chicago Region at the end of the third year of operation. The report will summarize key areas of accomplishments and remaining challenges. In addition, the program faculty will participate in the University's eight-year program review process to assess the program using multiple measures to determine the program's strengths and weaknesses. Key factors that will be used in the assessment of this program include evaluation of faculty teaching in the program; faculty research, grants, and contracts, as well as scholarship, awards, and honors; retention and graduation rates of students; student performance in research projects and internships; the quality of student theses, and the final oral examinations at the end of the program; evaluation results of faculty and staff at the Shedd Aquarium; the level of alumni and employer satisfaction with the program; and the percent of graduates employed in relevant occupations and industry. A summary of the program review, including the program's strengths and weaknesses, as well as steps to be taken to improve the program, will be submitted by the University to the IBHE with summaries of other programs reviewed in the same cycle.

## **Facilities (space, equipment, instructional materials)**

*1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.*

The proposed M.S. in Biology program will be offered at the Shedd Aquarium in Chicago. The Shedd Aquarium is the largest indoor aquarium in the Midwest, and it is recognized nationally and internationally as a leading institution in its field. The University has made arrangements to use the Shedd Aquarium Electronic Technology Classroom, which seats up to 25 students and houses a CODEC distance learning system. The system has four monitors, two cameras, four microphones, a CODEC system, a SMART board, a VHS, and DVD player. The classroom has a cabinet of laptop computers which students can use during class. CODEC is a compressed audio and video for two-way face-to-face communication between remote locations. An Internet connection is available to instructors and students free of charge. All classrooms at the Main Campus and the Quad Cities Campus are equipped with compatible CODEC equipment. These facilities and equipment are currently supporting the existing master's degree in Biology at the University, and they are more than sufficient to also support the proposed program.

### **Library**

Many journals currently support the University's M.S. in Biology program. They include *Zoo Biology*, *Marine Mammal Science*, *Aquatic Mammals*, *International Zoo Yearbook*, *Animal Keeper*, and *Soundings*. There are also a number of key books that support the program including *Wild Mammals in Captivity*, *Don't Shoot the Dog*, and *Basics of Animal Training*. In addition to these resources, the University subscribes to *IShare Online*, a computerized catalog and circulation system that provides immediate online access to the collections of the University and 56 other academic and research libraries throughout Illinois. Most materials in the collections are available online in PDF format and are also available to be emailed directly to students and faculty. The Shedd Aquarium also has a library collection which is available to University students. Furthermore, students can take advantage of the University's library online chat reference service for any immediate question or request. These resources will be available to support the proposed program.

## Technology and Instructional Resources

The University utilizes the Blackboard Learning System, a web-based learning management system, to deliver online courses and to enhance courses taught in the traditional classroom. The software offers a variety of useful tools for communication through announcements, emails, threaded discussions, interactive chat and whiteboards; assessment activities, including surveys, quizzes, and assignment drop boxes; and content acquisition features, such as learning modules, web links, and media libraries. The system can also be used to gather reports and organize grades. Further, a knowledge-base system (Right Answers) is due for deployment in January 2010, which will offer students and faculty a chance to troubleshoot several of their own technical problems at their leisure. In addition, the University offers technical assistance to faculty and students via a staffed helpdesk during the day and evening hours.

## Faculty and Staff

*1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.*

The M.S. in Biology program will be supported by four current full-time tenured and four full-time tenure-track faculty members with Ph.D.s in relevant fields. One faculty member will teach full-time at the Shedd Aquarium and one and a half faculty members will teach part-time at the Shedd Aquarium. Three professional staff at the Shedd Aquarium will provide instructional support to the proposed program. All tenured and tenure-track faculty have responsibilities for teaching, research, and service for the program and the discipline. Evaluation and reward procedures for the faculty are consistent with those established by departmental criteria and the faculty contract with the University.

## Fiscal and Personnel Resources

*1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based upon supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.*

No new state resources are requested to establish the M.S. in Biology program in the Chicago Region. The Department of Biological Sciences (the Department) will utilize the existing departmental funds that support the current course offerings for the existing M.S. in Biology program to support the proposed program. This funding is adequate to cover personal services, supplies, services, and equipment costs. Any additional unmet costs for the program

will be covered by the Department's existing operating budget and/or the tuition and fees that will be paid by students admitted to the program. The proposal for this program indicates that the total budget for the proposed program and the existing M.S. in Biology program are projected to grow from \$132,500 in the first year to \$160,733 in the fourth year of operation.

### **Accreditation and Licensure**

*1050.30(b)(3): Appropriate steps shall be taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.*

*1050.50 (a)(1) Three years after approval of a new program, the institution shall provide a program progress report to the Board as part of the institution's annual report. The third year progress report shall describe the institution's performance in meeting program objectives and show where any improvements are necessary. The placement of a program in voluntary temporary suspension will not negate the requirement of submitting a third year progress report.*

*1050.50 (a)(2)(C) Requirement for Programs in which State Licensure is Required for Employment in the Field: In the case of a program in which State licensure is required for employment in the field, a program can be found to be in good standing if the institution is able to provide evidence that program graduates are eligible to take the appropriate licensure examination and pass rates are maintained as specified in the objectives of the unit of instruction. If there is no such evidence, the institution shall report the program as flagged for review.*

There is no specialized accreditation for master's degree programs in biology. If the program is approved by the IBHE, the University's current accreditation by the Higher Learning Commission (HLC) will be extended to the program.

### **Program Information**

*1050.30 (b)(2)(A) The information the institution provides for students and the public shall include the following: (i) An accurate description of the unit of instruction, including its objectives, length and residency requirements if any; (ii) Schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, and cancellation and refund policies; (iii) Student rights and responsibilities; (iv) A statement regarding the transferability of college credits, including the fact that the decision to accept transfer credits is determined by the receiving institutions; (v) A statement as to how the institution will advise students on the nature of the transfer process, including the importance of consulting with institutions to which the student may seek to transfer; (vi) Evidence of arrangements for the transfer of courses or credits or both to institutional counterparts, when these arrangements exist; these arrangements are also known as articulation agreements; (vii) A statement of the institution's most recent graduation rates as provided by the institution to the Integrated Postsecondary Education Data System (IPEDS); and (viii) Other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. (B) The information listed in subsection (b)(2)(A) shall be available to prospective students prior to enrollment and shall be included in the institution's catalog of programs.*

Information about the University's Master of Science in Biology program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information, as well as University and Graduate School policies, will be published on the University's website, [www.wiu.edu](http://www.wiu.edu). Comparable information about the program will be published in hard copy in the University's Graduate Catalog. Similar information may be obtained from the Graduate School or the Department of Biology.

**Staff Conclusion.** The staff concludes that the Master of Science in Biology program proposed by Western Illinois University meets the criteria to implement the Board of Higher Education Act (110 ILCS 205) as set forth in the Board of Higher Education administrative rules (23 Ill. Adm. Code 1050.30), and the Illinois Board of Higher Education policies pertaining to assessment.

The staff recommends adoption of the following resolutions:

*The Illinois Board of Higher Education hereby grants to Eastern Illinois University authorization to establish the Master of Science (M.S.) in Technology in the North Suburban Region subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.*

*The Illinois Board of Higher Education hereby grants to Illinois State University authorization to establish the Master of Science (M.S.) in Chemistry Education in the Central Region subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.*

*The Illinois Board of Higher Education hereby grants to the University of Illinois at Chicago authorization to establish the Master of Arts in the Teaching (MAT) of Spanish in the Chicago Region subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.*

*The Illinois Board of Higher Education hereby grants to Western Illinois University authorization to establish the Master of Science (M.S.) in Biology in the Chicago Region subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.*