

**ASSOCIATE OF ARTS IN TEACHING:
SCIENCE EDUCATION**

Submitted for: Action

Summary: In September 2002, in cooperation with the Illinois Board of Higher Education (IBHE), the Illinois Community College Board (ICCB), and the Illinois State Board of Education (ISBE), the University of Illinois formed a steering committee to develop Associate of Arts in Teaching degree models. Representatives of public universities, community colleges, and the three state education agencies (IBHE, ICCB, and ISBE) came together to undertake this task. This collaboration has resulted in the development of Associate of Arts in Teaching degree models in high need teaching disciplines. Since September 2002, a steering committee has worked with hundreds of faculty, administrators, and agency representatives to develop models in three high need areas: Secondary Science, Secondary Mathematics, and Special Education.

At its December 9, 2003 meeting, the Illinois Board of Higher Education endorsed General Principles for model AAT degrees, as well as a model AAT in Mathematics. At this time, the Board is asked to endorse a model AAT for Science Education. This model was accepted and endorsed by the Illinois Community College Board at its May 21, 2004 meeting.

Action Requested: That the Illinois Board of Higher Education accept and endorse the model AAT in Science Education.

STATE OF ILLINOIS
BOARD OF HIGHER EDUCATION

**ASSOCIATE OF ARTS IN TEACHING:
SCIENCE EDUCATION**

Background

In September 2002, in cooperation with the Illinois Board of Higher Education (IBHE), the Illinois Community College Board (ICCB), and the Illinois State Board of Education (ISBE), the University of Illinois formed a steering committee to develop Associate of Arts in Teaching degree models. Representatives of public universities, community colleges, and the three state education agencies came together to undertake this task. This collaboration has resulted in development of Associate of Arts in Teaching degree models in high need teaching disciplines. Since September 2002, a steering committee has worked with hundreds of faculty, administrators, and agency representatives to develop models in three high need areas: Secondary Science, Secondary mathematics, and Special Education.

At its December 9, 2003 meeting, the Illinois Board of Higher Education accepted and endorsed General Principles for model AAT degrees, as well as a model AAT in Mathematics. Both the General Principles and model AAT in Mathematics had been accepted and endorsed by the Illinois Community College Board at its May 2004 meeting. The General Principles are listed below.

Work has resumed on the AAT in Special Education and the steering committee has agreed to undertake the development of a model for Early Childhood Education. The steering committee has been expanded to include representatives from Independent colleges and universities as well as public community colleges and universities.

Development of the AAT in Secondary Science Model

Secondary science encompasses a number of fields and presents a challenge in the development of a model that addresses issues of depth, breadth, and sequencing within the total hours provided in an associate degree. Development of an Associate of Arts in Teaching in Secondary Science Degree model commenced in September 2002 and was circulated for field review in the summer 2003. Based on the scope of feedback from the public comment period, the AAT steering committee recommended that further review and discussion take place in order to revise the model to best address the needs of students pursuing a degree in this field.

After thoughtful discussion and analysis, several modifications have been made to the model. Most significantly, the general education component was reduced to allow for the necessary major coursework required in math and science. It is not the intent of the committee to eliminate general education courses, but simply defer them to the junior or senior year for completion. This approach is supported by the AAT General Principles, which allow for a reduced general education requirement prior to transfer. This modification is suggested in good faith — that transfer students completing an AAT in Secondary Science would be required to

complete *only* those general education components which had been deferred, not be bound to a different or additional general education package at the receiving institution.

Secondly, the original major course recommendation was slightly revised to recognize that in disciplines that involve sequential courses, it is in the student's best interest to complete the initial sequence prior to transfer to ensure that all content is covered and to facilitate transfer of credit. This applies to Biology, Chemistry, and Physics. Therefore, students taking initial courses in these areas (the core courses in the model's recommendation) should also take the second course in the sequence to guarantee transfer credit. Depending on the number of hours in an individual's degree, there may be room for one science elective. A separate section listing recommended elective courses is reflected in the model, as well. It should be noted that the major course recommendations for the AAT differ somewhat from a regular IAI science major recommendation because the AAT recommendations are based on the state and national teaching standards for the sciences. An AAT Science Matrix that identifies the standards appropriate for freshmen/sophomore science courses was developed as part of the process of developing the degree model and is available on the Illinois Community College Board (ICCB) website at www.iccb.org.

Finally, because of the number of credit hours in both general education and the major content area, only Introduction to Education is listed for the Professional Education component.

General Principles of Associate in Arts in Teaching Degree Models

The following principles should guide the development of AAT degree models:

1. A degree model provides a general framework within which community colleges may develop specific degrees in accordance with institutional policies and priorities.
2. For most teaching specialties, the IAI General Education Common Core with one additional mathematics course will be appropriate. For some teaching specialties, it may be necessary to identify specific courses within the general education core, or the core may need to be modified.
3. Core language arts standards and standards related to global diversity and multiculturalism should be met through the general education component of the degree. Core technology standards may be met with an educational technology course, or may be infused throughout the general education component. Every college will be responsible for addressing the core technology standards, whether through a specific course or infusion in the curriculum.
4. Passing the Enhanced Test of Basic Skills will be a requirement for program completion. It is recommended that the test be administered no later than the point at which students have accumulated 45 semester hours and that remediation be provided for students who are not successful in their first attempt to pass the test.
5. Alignment of Illinois State Board of Education and National Council for the Accreditation of Teacher Education standards with AAT degree models will be done by groups of community college and university faculty.
6. Early field experiences need to begin in the first two years of a future teacher's preparation, regardless of whether a student begins at a community college or a

university. It is strongly suggested that the field experiences be related to the student's selected specialty area.

7. Community colleges should adopt a process for admission to AAT programs for purposes of advising and career development.
8. It will be critical that close communication is maintained between community college and university teacher education programs in order to provide smooth articulation and address problems as they arise. Each institution should formally identify a contact person to ensure that there is a clear pathway for this communication to occur.

Associate of Arts in Teaching Secondary Science Degree Model

1. General Education Component (35 - 38 semester credits)

Please Note: This degree model contains a reduced number of general education hours prior to transfer; however, students will still be expected to complete their remaining general education course work at the receiving institution. Because the general education package has been altered to accommodate for the number of science and math courses needed in the first two years, only a partial IAI General Education Core Curriculum (GECC) transfer package is available for this degree.

Communication: 9 semester credits (two-course writing sequence and one course in oral communications)

Mathematics: 7- 9 semester credits (Calculus I and Calculus II, or Statistics, or Linear Algebra*) *Students are advised to check with intended transfer institution for transfer guidelines.*

Physical and Life Sciences: 7 - 8 semester credits (one course from the life sciences, one course from the physical sciences, and at least one laboratory course)

Humanities & Fine Arts: 6 semester credits (one course from humanities and one from the fine arts) *Completion of three additional hours would be required in the junior or senior year.*

Social and Behavioral Sciences: 6 semester credits (courses selected from two disciplines) *Completion of three additional hours would be required in the junior or senior year.*

2. Professional Education Component (3 semester credits)

Required: Introduction to Education (with a clinical component*)

*The clinical component should include field experiences in a variety of school settings. For students intending to pursue an AAT Secondary Science degree, it would be appropriate for half the number of hours to be spent in a secondary science environment.

A variety of assignments and activities should be included, with artifacts and assessments documented. A minimum of 15 contact hours of field experience is required.

Please note: A separate, one-hour course focusing solely on field experience activities may be included, as well; however, students should be aware that such a course may not be transferable.

3. Major Area Sequence (18 - 23 semester credits)

Core Courses: 6 - 8 semester credits

All four of the following core courses are required; however, two of the courses can be used to fulfill general education requirements.

Earth Science
Introduction to Biological Sciences I
General Chemistry I
General Physics I with Calculus

Major Courses: 12-15 semester credits

In order to fulfill IAI transfer requirements, the following supporting classes are necessary to complete the second course in the Biology, Chemistry, and Physics sequence:

Introduction to Biological Sciences II
General Chemistry II
General Physics II with Calculus

4. Elective Option (4 semester credits)

If additional hours are available, choose one course from the following list which best supports your area of concentration:

Organic Chemistry I
Anatomy and Physiology I
General Physics III with Calculus
Biology elective

Total for the degree: 60 - 64 semester credits

The staff recommends that the Illinois Board of Higher Education adopt the following resolution:

The Illinois Board of Higher Education hereby accepts and endorses the model Associate of Arts in Teaching in Science Education.