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Associate of Arts In Teaching Degree - Maryland Style
The Role of Geoscience Courses in Maryland's Associate of Arts in Teaching Degree

What better way to encourage greater participation of two-year colleges in geoscience education than to be a part of the teacher training process. Universities and four-year colleges have historically shouldered the responsibility of training teachers. But the number of qualified instructors has not kept up with the demand, especially in the STEM subjects. In response to this situation, Maryland has identified the two-year colleges as partners in teacher education. The result is the Associate of Arts in Teaching degree. This degree is set up so that students can articulate into a four-year program seamlessly.

The "Associate of Art in Teaching (A.A.T.)" means a degree which recognizes mastery in teacher education which encompasses the following:

(a) Meets the lower-level degree academic content, outcomes, and requirements for teacher education, similar to the first two years of a baccalaureate program in teacher education;

(b) Requires evidence of qualifying scores as established by the State Superintendent of Schools on the teacher certification tests approved by the State Board of Education;

(c) Requires a cumulative grade point average of 2.75 on a 4.00 scale; and

(d) If achieved, transfers **(**in total**)** *up to 64 semester credit hours, satisfying all lower-division teacher education program outcomes* without further review by Maryland public and independent four-year institutions. (As a note, this has not always been followed by the four-year institutions.)

This outcomes-based statewide articulation agreement for preparing teachers was developed through statewide collaboration of faculty, administrators, and staff from State agencies in 2001. The first program, the AAT in Elementary Education/Elementary Special Education, was the model for subsequent agreements in other teaching specialties: early childhood education/early childhood special education and secondary education in the fields of chemistry, English, mathematics, physics, and Spanish. Earth Science was also considered (I was on the planning team), but was put off until a later time due to lack of consensus on several points. The agreement allows for *block transfer*, not *course-by-course* transfer.

One advantage to this approach is the direct recruiting afforded to two-year colleges with local high schools. For example, FCC and the Frederick County Public Schools have a working relationship through a Collaboration Council that meets periodically through the year. Potential education majors are identified

early and encouraged to visit the campus. Further, education majors attending FCC often volunteer or work as “paid-teacher aids” in the local schools, providing additional “visibility” in the form of mentors to the program.

To complete this degree, elementary students must take three four-credit lab sciences: one biology course, one physical science (physics and chemistry) and one geoscience course. The science courses for secondary majors are prescribed by the particular major.

One of the courses I developed at Frederick CC for the AAT degree is PC 115, Introduction to Geoscience. Topics include geology, meteorology, some astronomy and oceanography. This course is taken by all elementary education majors. It can also be taken by non-education majors as a *gen ed* elective. Some students who have taken this course have gone on to take a full semester of one of the geosciences.

All AAT science courses are taught using a constructivist approach, using hands-on, inquiry-oriented activities and labs. Originally, a major component of assessment was completed through a portfolio process, but this became too time intensive and was dropped as a requirement, although it is still encouraged. Students are also required to present a major lesson to the class and must incorporate state standards such as the Maryland CLOs or the Virginia SOLs.

While the criterion for secondary certification in Earth Science is still pending, FCC currently offers the core geoscience courses. Many of these courses are offered completely online or as a hybrid. Indeed, my online courses are often populated with teachers certified in another discipline who are looking to add an Earth Science endorsement as well.

Programs like the AAT degree offer future teachers a new, more flexible path to achieve their career goals. The key is to approach program like the AAT in a thoughtful manner that will graduate well-prepared students.