

Initial Approval of Specialty Program

Recommendations from Review Panel Regarding Programs to Prepare Teachers of Integrated Science: Elementary (DI)

January 11, 2006

Institution: Central Michigan University					
Program Level	Major (# Credits)	Minor (# Credits)	Group Major (# Credits)	Group Minor (# Credits)	Endorsement Only (# Credits)
Elementary			38-39	33-34	
Secondary					
K-12					
Source of Standards/Guidelines: Michigan State Board of Education				Pub. Date: Aug. 8, 2002	
Program Assessment Summary/Recommendation					
Meets all standards and requirements	X	Not all standards and requirements are met		X	Insufficient documentation for program review
Approval	X	Program is not Approvable as Presented			
Standards/Requirements Not Met:					
<p>Standard 1.2.2 – <i>living and non-living</i>, is not met. BIO 101 <i>General Biology</i> is the only course cited for this standard, but BIO 101 is 1 of 2 possible course selections for the elementary major or minor. Please confirm how the institution meets this standard for all elementary majors or minors if BIO 101 is not taken.</p> <p>Standard 1.8.1.9 - <i>qualitative analysis</i> is not met. Evidence supporting this standard lacks detail. Evidence is needed beyond, "<i>CHM 127 has an experiment on unknown analysis.</i>" Provide concepts, activities and descriptions within the narrative that support this standard.</p> <p>Standard 6.0 - <i>safe science classroom</i> is not met. Please include direct references to the safe standards as identified by the Council of State Science Supervisors. The elementary and secondary safety guide, checklist, and recommendations can be accessed at http://www.csss-science.org/safety.shtml.</p>					
Additional information needed/action to be taken:					
<p>Please clarify the number of semester hours needed for an elementary integrated science group minor. Form XX states 30-31, but when reviewers added the required courses on Form XX, the total appeared to be 33-34.</p> <p>Form XX includes BIO 229 (<i>Nature Study</i>) as a required course for an elementary minor. The course list at the end of the Program Summary does not include BIO 229. If BIO 229 is not required in the program, then the semester hour total and standards covered by BIO 229 are in jeopardy. Please clarify.</p>					

Please clarify Kevin Stedman's qualifications. He is listed as teaching PHS 351 (*Physical Science for the Elementary Grades*) and PHS 452 (*Physical Science for the Middle Grades*) with a "M.S. from CMU in Counseling and a B.S. in Ed. from CMU in Mathematics and Physics.

Please specify and clarify how teacher candidates are prepared to utilize a variety of instructional approaches to address the various learning styles of students in the program summary portion of the application. The program summary includes one method of preparing students. "*Students experience a variety of instructional approaches throughout their career at CMU.*" Also, the program summary states that courses "*require students to apply their knowledge of different learning styles as they design lesson plans to accommodate various learning styles.*" This does not explain how candidates gain their knowledge of different learning styles and instructional approaches.

Standard A (*Michigan Curriculum Framework*) and C (*prepares candidates to understand and teach biology, chemistry, physics, and earth/space science as integrated content*) do not have any courses and course numbers cited for the elementary minor. Provide course names and numbers in addition to the narrative that meet these standards.

Comments:

Reviewers compliment:

- The large percentage (76%) of faculty reporting involvement in P-12 collaborative work.

Reviewers suggest:

- Consider adding hot links within the matrix to facilitate movement from course to syllabi.
- Specifying the optional or elective courses cited throughout the matrix. For example, Standard 4.0 - *locate appropriate resources, design and conduct inquiry-based open-ended scientific investigations, interpret findings, communicate results, and make judgments based on evidence* – cites BIO 351, but does not state it is one of four possible course selections available to teacher candidates.

Standard 1.7.4 – *astronomy*. PHS 101 *Survey of Physical Science* is cited as meeting this standard for an elementary major. PHS 101 is not a required course for an elementary major according to Form XX, Application Attachment 3. Should the institution simply shift the PHS 101 from the elementary major to the elementary minor column?

The institution is encouraged to begin collecting outcome data related to the Integrated Science: Elementary standards because outcome data will be the basis of subsequent periodic reviews.