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Action

Professional Services Committee

Adoption of Proposed Preconditions for Foundational Science Subject Matter Programs

Executive Summary: This agenda item presents the proposed Preconditions for Foundational Science Subject Matter Programs for approval.

Recommended Action: That the Commission adopt the proposed Preconditions.

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Strategic Plan Goal: 1

Promote educational excellence through the preparation and certification of professional educators

- ◆ Sustain high quality standards for the preparation and performance of professional educators and for the accreditation of credential programs

January 2011

Adoption of Proposed Preconditions for Foundational Science Subject Matter Programs

Introduction

In March 2010, Commission staff presented an agenda item with proposed preconditions for Foundational-Level General Science (FLGS) Subject Matter programs (<http://www.ctc.ca.gov/commission/agendas/2010-03/2010-03-2C.pdf>). At the March 2010 meeting, the Commission directed staff to conduct a survey to further inform the development of the preconditions. Staff provided the results of the field survey and the final version of the proposed preconditions at the December 2010 Commission meeting. This agenda item proposes the Preconditions for adoption by the Commission.

Background

The Preconditions (<http://www.ctc.ca.gov/educator-prep/STDS-subject-matter.html>) for subject matter programs address the required number of units in the approved program and set the breadth, depth and concentrations of the subject matter content areas which must be included in the program. While the number of required units set by the Preconditions varies slightly across the content areas of the subject matter preparation programs, the Commission has required a minimum of 45 semester units in the specified subject for all thirteen content areas. The Preconditions for Science in Biology, Chemistry, Geosciences, and Physics read as follows:

To be approved by the Commission, a Subject Matter Program in Science must comply with the following preconditions.

- (1) Each Program of Subject Matter Preparation for the Single Subject Teaching Credential in Science shall include (a) a minimum of 24 semester units (or 36 quarter units) of core coursework in science subjects and related subjects that are commonly taught in departmentalized classes in California public schools, and (b) a minimum of 18 semester units (or 27 quarter units) of coursework that provides extended study of the subject, and (c) 3 semester units (or 5 quarter units) in the subject. These requirements are elaborated in Preconditions 2 and 3.*
- (2) The core of the program (Breadth of Study) shall include coursework in (or directly related to) biological sciences, chemistry, geosciences and physics as commonly taught in departmentalized science classes in California public schools.*
- (3) Extended studies in the program (Depth of Study) shall include at least one concentration of the four science areas. Each concentration shall comprise at least 18 semester units or 27 quarter units. In addition the program shall include at least 3 semester units (5 quarter units) of additional extended study, either designated as breadth or depth studies at the discretion of the institution.*

Foundational-Level General Science (FLGS) Credential Authorization

The holder of a credential authorization in FLGS is authorized to teach:

- 1) Introductory and general science, introductory life science, and introductory physical science in grades preschool, kindergarten through twelve, and in classes organized primarily for adults; and
- 2) Integrated science in grades preschool and kindergarten through eight. (Title 5 Section 80004).

As with other single subject credentials, an individual may meet the subject matter requirement for FLGS by taking coursework or by passing the two General Science subtests of the California Subject Matter Examinations for Teachers (CSET).

Proposed Foundational-Level General Science Preconditions

The scope of content knowledge assessed by the CSET examination for purposes of establishing FLGS subject matter competency includes all of the science areas (biology, chemistry, geosciences and physics) at the general science level (http://www.cset.nesinc.com/PDFs/CS_genscience_SMR.pdf). Passage of this subtest meets the subject matter requirement for the FLGS. Given the reduced scope of required subject matter competency for this credential, the Commission might consider the General Science subject matter content requirements as sufficient to express the scope of subject matter coursework required to qualify for the for FLGS. However, since the No Child Left Behind (NCLB) legislation requires 32 semester units to meet the subject matter competency requirement for highly qualified teachers, it might be appropriate also to align the number of units for FLGS with NCLB. The FLGS subject matter programs would be expected to include at least two courses for each of the four sciences defined by the general science subject matter requirements.

Field Survey for Foundational-Level General Science

Following Commission direction, staff conducted a field survey to ascertain the level of preparation that science educators deem appropriate for teaching FLGS. Staff presented the results of the field survey in the December 2010 Commission agenda. The results of the survey are summarized below:

Table 1. Field Survey Questions

Questions	Responses	Response Count
The Foundational Level General Science Credential should require the same general science requirements as the full science credential (27 semester units).	Yes 51.2%	21
	No 48.8%	20
The Foundational Level General Science Credential should require 32 semester units of foundational science coursework to ensure that the teachers are NCLB compliant.	Yes 63.4%	26
	No 36.6%	15
The Foundational Level General Science Credential should require 45 semester units of foundational science coursework.	Yes 26.8%	11
	No 73.2%	30

Given the responses from the field survey, staff proposes the following Preconditions for Subject Matter programs in Foundational-Level General Science for Commission approval:

To be approved by the Commission, a Subject Matter Program in Foundational-Level General Science must comply with the following preconditions.

- (1) Each Program of Subject Matter Preparation for the Single Subject Teaching Credential in Foundational-Level General Science shall include (a) a minimum of 32 semester units (or 48 quarter units) of coursework in science as commonly taught in departmentalized science classes in California public schools through grade 9.*
- (2) The program of study shall include at least 8 semester units (12 quarter units) as defined by the General Science Subject Matter Requirements in each of four science areas: biology, chemistry, geosciences, and physics.*

Next Steps

If the Commission adopts the proposed Preconditions for the Foundational-Level General Science Subject Matter Program, staff will begin implementation of the Commission's action. The steps will include issuance of a Program Sponsor Alert (PSA) to the field and revision by staff of all relevant standards documents. The Commission website will also be updated accordingly. Program sponsors will be allowed to apply for approval of Foundational-Level General Science subject matter programs effective immediately. Programs currently approved for the full science subject matter programs in biology, chemistry, geosciences and physics will be allowed to recommend candidates for the FLGS credential immediately through written statement to the Commission that the program intends to use its approved general science coursework as an approved FLGS subject matter program.