

CCHE Agenda
March 1, 2002
University of Colorado at Denver
Room 320, Tivoli Student Union
Denver, Colorado
1:00 p.m.

I. Approval of Minutes

II. Reports

- A. Chair's Report - Lamm
- B. Commissioners' Reports
- C. Advisory Committee Reports
- D. Public Comment

III. Consent Items

- A. Proposals for New Academic Degree Programs
 - 1. University of Colorado at Denver Ph.D. in Computer Science & Information Systems - Samson
 - 2. Proposal to Offer a Bachelor of Arts in Special Education at Metropolitan State College of Denver - Samson
- B. Front Range Community College Proposal to Relocate Colorado Advanced Photonics Technology Center from Former HEAT Center - Richardson

IV. Action Items

- A. Western State College Request to Increase Non-Resident Tuition by an Additional \$200 – FY 2003 CCHE Budget Request - Jacobs (15 minutes)
- B. Discussion and Approval of Management Structure at the UCHSC and Fitzsimons Research Complex, Education Space - Johnson (60 minutes)
- C. Colorado State University (CSU) Center for the Arts Capital Construction Project and Decision on Further Phasing of the Project - Johnson (10 minutes)
- D. Discussion and Decision on a New Colorado School of Mines Capital Construction Project - Johnson (10 minutes)
- E. Fort Lewis Hesperus Account - Jacobs (new item)

V. Items for Discussion and Possible Action

- A. Adoption of Criteria for "State Guaranteed" General Education Courses - Samson/Gettle

VI. Written Reports for Possible Discussion

- A. Report on Out-of-State Instruction - Breckel

Colorado Commission on Higher Education (CCHE)
March 1, 2002
Agenda Item II, A

TOPIC: CHAIR'S REPORT

PREPARED BY: PEGGY LAMM

This item will be a regular monthly discussion of items that he feels will be of interest to the Commission.

Colorado Commission on Higher Education (CCHE)
March 1, 2002
Agenda Item II, B

TOPIC: COMMISSIONERS' REPORT

PREPARED BY: COMMISSIONERS

This item provides an opportunity for Commissioners to report on their activities of the past month.

Colorado Commission on Higher Education (CCHE)

March 1, 2002

Agenda Item II, C

TOPIC: ADVISORY COMMITTEE REPORTS

PREPARED BY: ADVISORY COMMITTEE MEMBERS

This item provides an opportunity for Commission Advisory Committee members to report on items of interest to the Commission.

Colorado Commission on Higher Education (CCHE)
March 1, 2002
Agenda Item II, D

TOPIC: PUBLIC COMMENT

PREPARED BY: TIM FOSTER

This item provides an opportunity for public comment on any item unrelated to the meeting agenda. A sign-up sheet is provided on the day of the meeting for all persons wishing to address the Commission on issues not on the agenda. Speakers are called in the order in which they sign up. Each participant begins by stating his/her name, address and organization. Participants are asked to keep their comments brief and not repeat what others have said.

**TOPIC: PH.D. IN COMPUTER SCIENCE AND INFORMATION SYSTEMS
AT THE UNIVERSITY OF COLORADO AT DENVER**

PREPARED BY: SHARON M. SAMSON

I. SUMMARY

The Regents of the University of Colorado, in conjunction with the Colorado Institute of Technology, have submitted a proposal for a Ph.D. in Computer Science and Information Systems to be offered by the University of Colorado at Denver. The program is intended to (1) provide a doctoral degree that meets the needs of current professionals in the computing field, and (2) enhance technology transfer between CSIS academic units and Front Range technology businesses through joint research, student internships, faculty externships, and industry participation.

The overall goal of the proposed program is to provide high quality interdisciplinary education in Computer Science and Information Systems. This goal is congruent with the mission and strategic plan of the Denver campus in development of new programs in response to the community and student demand. According to the proposal, the integrated nature of the computing field values individuals with diverse educational backgrounds. About 15% of computer science students have a business background while 20% of information system students have background in computer science or engineering. The natural cross over between the fields indicate an unmet educational need to address emerging computer technology issues at an advanced level.

UCD plans to implement this degree program in 2002-03 with a projected enrollment of 4 to 5 students per year, leading to an enrollment of 16 to 20 students (Attachment A).

The factors supporting the proposed degree program in Computer Science and Information Systems include:

- The doctoral degree in Computer Science and Information Systems is consistent with UCD's role and mission.
- While CSU and UCB offer doctoral degrees in Computer Science, no public institution offers a doctoral degree that explicitly integrates the two facets of computer technology.
- The endorsement and collaboration with the Colorado Institute of Technology.
- Innovative funding approach. The general fund state support in this proposal varies from traditional reliance on FTE. It is performance-based, calculated by assuming that general fund state support will be credited to the program in the final year of a student's studies. UCD state support is \$4,832 per resident FTE. In this proposal the state's funding will be awarded by the number of graduates. When the program reaches steady state, it will graduate 2 to 3 Colorado resident per year. (See Attachment B).

The least clear factor involves bona fide need. The Regents discussed the need issue at their meeting and recognized the difficulty in assessing demand in a changing economy. The Commission raised this issue in the January concept paper review, and requested an evaluation of other doctoral degrees in Computer Science operating in Colorado. After review of the data, CCHE staff position conclude that enrollment in a doctoral degree program is less dependent on the current economic status of information technology businesses. The proposal originates from a premise that Colorado needs to create a portfolio of innovative academic degree programs to support Colorado's statewide needs. Furthermore, the degree approval policy is based on the belief that a doctoral degree program should justify approval by providing evidence of strong performance at this degree level (e.g., nationally ranked degree program in the field and strong graduation rates in other doctoral degrees). UCD has strong performance in doctoral degree programs that justify approving a new doctoral degree and a long time record of partnerships with national and state information technology organizations – both financial and leadership.

Staff recommend approving the request for the Ph.D. in Computer Science and Information Systems at the University of Colorado at Denver.

II. BACKGROUND

The concept paper for this degree program appeared before the Commission at its January 2002 meeting. The Commission staff raised one issue for further clarification by the Regents – bona fide demand for a doctoral degree in this field. The Regents subsequently approved the proposal at its January 2002 meeting. The following is summarized from UCD's proposal.

The overall goal of the Ph.D. program in Computer Science and Information Systems is to provide high-quality education in CSIS for graduate students at the University of Colorado at Denver. The Ph. D. program targets students with a Master's level education who seek research training that combines computer science and information systems along with strong industry interaction. We will seek applicants with MS degrees mainly in Computer Science and Information Systems; the other degrees, with some additional coursework, are MS degrees in Mathematics, Physics, Business, and Engineering. The specific goals of the Ph.D. program, listed below, complement these general goals.

I. Create a pool of graduates with advanced CSIS training who are qualified for academic and nonacademic careers

Ph.D. graduates in CSIS will have career opportunities in both academic and industrial environments. We envision that the majority of the program students will come from industry and stay at industry, with only several being full time students who possibly will look for careers in academia. Both kinds of careers demand broad interdisciplinary knowledge along with a solid foundation in research methodologies. A given research problem may require knowledge from a variety of fields. Furthermore, the nature of the research problem may change frequently. For

these reasons, the researcher must have a broad knowledge base and the skills necessary to continue the life-long learning process. One of the goals of the joint Ph.D. program is to create broadly trained graduates who can continue to contribute to new fields of knowledge with the latest information technology developments and tools.

II. Meet student demand for advanced training in CSIS

The existing MS programs in computer science or in information systems were designed to provide graduate students breadth knowledge in the respective disciplines. These programs have been successful in providing technical and management career opportunities in the Rocky Mountain region. However, these programs do not meet the needs of students who want integrated training in both disciplines and research skills, at the advanced level, for academic and technical careers.

III. Promote interdisciplinary research between the CSE Department and the College of Business

There are a growing number of significant problems that lie on boundary between computer science and information systems. Problems in software engineering, computer system performance analysis, project planning, intelligent agents, data mining, and information economics require approaches that combine traditional techniques from computer science and information systems. This joint Ph.D. program will focus attention to the many problems that require joint approach and provide a formal mechanism for cooperation among faculty in the CSE Department and the College of Business.

IV. Enhance technology transfer between CSIS academic units and Front Range technology businesses through joint research, student internships, faculty externships, and committee participation

The CSE Department and the College of Business have well-established programs to support interaction with Front Range technology businesses. The CSE Department has an active Industrial Advisory Committee, which consists of representatives of major high-technology companies in the Denver area. The College of Business has the Center for Information Technology Innovation with close connections to more than 30 Chief Information Officers. The joint Ph.D. will expand these relationships and support new relationships that focus on research and development. The joint Ph.D. program will support relationships with Front Range technology businesses through industry representation on student committees, student internships, and corporate sponsorship of students, faculty externships, and joint research projects.

V. *Extend resource sharing between the CSE Department and the College of Business*

As recognition of the need for computer scientists to work with other computing disciplines to create an IT profession, the CSE department and College of Business have agreed to closer integration and resource sharing across all programs. As part of this initiative, a new proposal to the Colorado Institute of Technology entitled “Expansion and Integration of Information Technology Education at CU Denver” seeks funding to integrate course offerings at the undergraduate level and to provide seed funds for the joint Ph.D. program. The joint Ph.D. program will require cooperation between the CSE Department and the College of Business in admittance of students, enrollment of students in graduate courses, course design and offerings, and supervision of students. This level of cooperation should also spur additional resource sharing and integrated course offerings in the existing graduate programs.

We expect an enrollment of about 4 to 5 students per year in the program leading to an enrollment of approximately 16 to 20 students yearly overall when the program has been in effect for five years. This is a conservative estimate based on: (a) the enrollment in the current MS programs and indications of interest in a joint Ph.D. from those students, (b) the interest of Colorado companies, and (c) the lack of competing programs in the Rocky Mountain region. The estimate is driven by our own resource limits rather than projections about demand.

As in most Ph.D. programs, the goals of the program are to be achieved by both the course work and research training as summarized in Table 1. The courses will be of three types: (1) core and elective courses designed and offered specifically for the CSIS Ph.D. program, (2) research methodology courses to provide background in CSIS reference disciplines, and (3) graduate courses already offered by the participating academic units. The comprehensive exam will ensure that candidates have mastery about the breadth of knowledge in their course work. The advisor and committee of each student determine the format of the comprehensive exam. The graduate seminars and the interdisciplinary dissertation provide research training. The graduate seminars provide exposure to a breadth of research in CSIS and require the student to conduct original research under close supervision of CSIS faculty. As culmination of the graduate seminars courses, students must complete quality papers at the end of the first and second years in the program. After completing the graduate seminars and other CSIS courses, students should be prepared to perform independent research leading to the completion of a dissertation.

Table 1. Overview of the joint Ph.D. Program

<u>Requirement</u>	<u>Purpose</u>	<u>Progress for a full-time student</u>
CSIS core courses	Broad foundation in CSIS Research areas and methods	Complete in year 1
CSIS elective courses	Depth of knowledge in CSIS Sub areas	Complete in year 2
Graduate Seminars	Research skills on two projects Resulting in publishable articles	Research papers; years 1 and 2
Methodology courses	Background in important reference	Complete in year 1

Disciplines of CSIS

Breadth CSIS courses	Broad exposure to CSIS areas of Practice	Complete in year 2
Comprehensive exam	Assessment of student's ability to continue in the program	After finishing course work
Ph.D. proposal	Should demonstrate student's expertise in the chosen area	End of year 3
Dissertation	Rigorous, original, and significant Defense at the end of year 4 Contribution to a CSIS area	

A total of 30 hours of CSIS courses are required beyond the Master's level as shown in Table 2. The course work is designed to provide exposure to advanced CSIS areas, a solid research methodology background, and a breadth in other areas of CSIS. The student can transfer a maximum of 15 hours to satisfy the Research Methodology, the Ph.D. electives, and the additional graduate courses with the consent of his/her advisor.

Table 2. Summary of Credit Hour Requirements

<u>Course</u>	<u>Credit hours</u>
Ph.D. core courses	6
Ph. D. elective courses	6
Graduate seminars	6
Research methodology courses	6
Breadth courses in CSIS	6
Total	30

As a culmination of the graduate seminars and other courses, students will write quality papers at the end of the first and second years in the program. Students will choose an advisor at the beginning of their first year. The advisor serves as a mentor to help the student complete the first and second year papers. For part-time students the timing will be slightly longer. Each paper will be judged by a committee of three faculty along with an outside industry representative. At least one faculty member must be outside the home academic unit of the student. One of the committee members will be the student's advisor.

Following completion of the course work and papers, students will write an original dissertation. Students will be encouraged to exploit state of the art methods from both computer science and information systems in their dissertation. To facilitate interdisciplinary dissertations, students can have their doctoral research co-supervised by two faculty members from the CSE Department and the College of Business. The doctoral committee will include four faculty members including the advisor; one of the faculty must be from the non-home academic unit, plus a mandatory industry representative. In accordance with the rules of the graduate school, students must take at least 30 hours of dissertation research.

CU-Denver has two strong and well-established programs, one in information systems (IS) at the School of Business (COB), and the other in Computer Science and Engineering (CSE) in the CSE Department, College of Engineering (CE). Both address needs of industry and students by providing education to students in the area of information technology (IT). We propose to coordinate and integrate the two programs at the undergraduate and graduate levels. At the graduate level we are developing a new joint Ph.D. program, and at the undergraduate level we propose to strengthen both IS and CS programs by adding new courses to the existing curricula. It will require development of six new undergraduate courses, which will be cross-listed across two Colleges.

The goals of this project, therefore, are (1) to accelerate the development and delivery of three new courses in the undergraduate IS program to meet the industry needs and to obtain accreditation based on the ACM/AIS 2000 standards, (2) to accelerate the development and delivery of three new elective courses in the CS program and obtain ABET/CSAB accreditation, (3) to integrate the undergraduate IS and CS curricula across the two programs, and (4) develop a joint Ph.D. program in CS and IS (CSIS). The ultimate goal of this project is to offer breadth and depth to both IS and CS degrees, and to provide increased flexibility to students who pursue IT education at CU-Denver.

At the undergraduate level we will be developing six new courses. Each of the IS and CS programs will develop three new courses. Two new courses (one by each program) will be taught and shared by faculty at both CS and IS. The other four courses (two in each program) will be more program-specific and will be offered at both IS and CS undergraduate programs. Currently neither COB nor CSE has an existing Ph.D. program. The joint Ph.D. program that will be developed in CSIS will respond to a strong need for such a unique program in Colorado.

We intend to work in development and the implementation phases of this project with the Center on IT Innovation (<http://citi.cudenver.edu>) in COB, and CSE Department Industrial Advisory Board. Member companies include SUN, Qwest, Level 3, ORACLE, JD Edwards, Lockheed Martin, Raytheon, Microsoft, TRW, BoldTech Systems, Swisslog, Blue Marble, and Western Colorado Graduate Center, and others.

III. ANALYSIS

In analyzing the program proposal, the staff considered role and mission, duplication, program need and demand, and quality issues such as curriculum and resources. The Regents have analyzed the quality, capacity and cost-effectiveness of the proposed degree program (Attachment C).

Role and Mission

As an urban university, UCD is authorized to offer doctoral degrees in professional fields – applied mathematics, civil engineering, design and planning, educational leadership, and public administration, and health and behavioral science. Each of these degree programs have robust enrollment and annually graduate between two to twenty students – above the benchmark for doctoral degree programs. Its statutory mission statement states that the University of Colorado at Denver “shall provide selected professional programs and such graduate programs as will serve the needs of the Denver metropolitan area.”

Duplication and Bona Fide Need

Duplication and bona fide need factor into degree approval at the doctoral level. Doctoral degrees require greater resources for faculty and research to sustain a quality doctoral program. Consequently, the state supports doctoral degree proposals that are non duplicative.

There are no Ph.D. programs in the State of Colorado that integrate computer science and information systems. There are four Ph.D. programs in Computer Science. Three are offered by the Colleges of Engineering at UC Boulder, Colorado School of Mines and UC Colorado Springs. The fourth one, at Colorado State University, is offered by the College of Science. All are traditional computer science programs. CSM, CSU, and UCB are designed to serve the full-time student.

Institution	Graduates in 2001
Colorado School of Mines	1
Colorado State University	5
University of Colorado at Boulder	10
University of Colorado at Colorado Springs	0
Proposed: University of Colorado at Denver	Projected 5 per year

Quality

The proposed CSIS program design is performance-based. Table 1 (page 4) delineates the academic goals and student assessment points. CIT indicated that the proposed design position UCD to being an educational leader in new-generation design concepts and practices. What is needed is *expertise in applying IT to engineering design*. Incorporation of IT into the skill set of the traditional engineering design domains can maximize the richness and efficiency of design practice in civil, mechanical and electrical engineering.

- Perhaps the most interesting argument is that the University and the Colorado Institute of Technology (CIT) believe in the value of the curriculum design. In short, the proposal outlines a budget that deviates from the traditional reliance on FTE. It is performance-based, calculated by assuming that general fund state support will be credited to the program in the final year of a student's study. UCD state support is \$4,832 per resident FTE. In this proposal the state's funding will be awarded by the number of graduates. When the program reaches steady state, it will graduate 2 to 3 Colorado resident per year. (See Attachment B).

IV. STAFF RECOMMENDATION

That the Commission approve the request of the University of Colorado Regents to offer a Ph.D. degree in *Computer Science and Information Systems* at the University of Colorado at Denver.

Program Budget

Operating Expenses

1. Faculty

The estimate for faculty cost is based on the courses that will be offered that would not be taught if the program were not in effect and on the frequency of those courses. Courses, which are already being offered and are part of the existing programs in the participating academic units, are not included. The cost per faculty member is based on the average salary plus benefits in the corresponding academic unit (CSE or Information Systems faculty in the COB). The faculty FTE is based on a full teaching load of 12 credit hours per year per faculty member. Table A5.1 below shows the calculations for faculty costs for each course.

Table A5.1: Cost for Faculty per Course

Course	Frequency	Faculty FTE per course	Faculty FTE per year	Average cost of 1.0 FTE	Cost per year of class
Advances in Management Information Systems (Core I)	Once/year	0.1	0.1	\$116,650	\$11,665
Foundations in AI-Based Decision Making (Core II)	Once/year	0.1	0.1	\$100,233	\$10,023
Topics in Behavioral and Organizational Research in Management Information Systems (COB Elective I)	Once per two years	0.1	0.05	\$116,650	\$5,832
Topics in Analytical Research in Management Information Systems (COB Elective II)	Once per two years	0.1	0.05	\$116,650	\$5,832
Human Computer Interaction	Once per two years	0.1	0.05	\$100,233	\$5,012
Design of Secure Systems	Once per two years	0.1	0.05	\$100,233	\$5,012

2. Financial Aid Specific to Program

In the third or fourth year, each student must work as a teaching assistant for two semesters. For one semester, the student will assist a faculty member with classes. For the other semester, the student will teach two sections of a course. The program budget includes funding for salary, benefits, and tuition waiver for teaching assistants. The salary and benefits will be \$15,000 per teaching assistant per year. In the College of Business, outside lecture costs will be reduced by \$6,000 per year because each

teaching assistant will replace two outside lecturers. In the CSE department, outside lecture costs will be reduced by \$8,000 per year because each teaching assistant will replace two outside lecturers. In addition, to the salary plus benefits paid to the teaching assistants, in-state tuition (\$2,057 per semester) will be paid for each teaching assistant. The College of Business and the CSE Department have agreed to fund these additional costs. Appendix 8 contains letters of support from the Dean of the College of Business and the chair of the CSE Department to fund the costs of teaching assistants.

In addition to the support for instructional training, we will seek support to provide research assistantships for outstanding students. Because this support will be provided externally through research grants and fellowships, these costs do not appear in the budget.

Table A5.2: Stipend and Tuition Costs for Graduate Students

Cost	Academic Unit	Cost
In-State	COB	\$2,057 per semester
Out-of-State	COB	\$7,254 per semester
In-State	Engineering	\$2,057 per semester
Out-of-State	Engineering	\$7,254 per semester
Stipend plus benefits	COB	\$15,000 per year
Stipend plus benefits	CSE	\$15,000 per year

3. Program Administration

The administrative staff will consist of two co-directors as shown in Table A5.3. The duties of the program co-directors will be combined with program directors for the undergraduate programs in CS and IS for organizational efficiency.

Table A5.3: Administrative Costs

<i>Position</i>	<i>Percent Dedicated</i>	<i>Salary plus Benefits</i>	<i>Program Cost</i>
CSE Co-Director	5%	\$125,000	\$6,250
COB Co-Director	5%	\$131,000	\$6,550
Total			\$12,800

The other operating costs are given in Table A5.4 below. There will be a speaker series with several speakers per year, promotional materials, and postage for mailing promotional materials and program information. The speaker series will be part of a broader series covering undergraduate and graduate programs in Computer Science and Information Systems. In addition, there will be fixed costs to prepare promotional materials that are not included in Table A5.4.

Table A5.4: Other Operating Expenses

Item	Cost
Speaker Series	\$4,000
Promotional Materials	\$500
Postage	\$500
Total Other Operating Costs	\$5,000

Table A5.5 summarizes the total program expenses. An inflation factor of 3% per year has been applied to the costs presented previously.

Table A5.5: Total Program Expenses

Year	Faculty costs	TA Count	TA	Directors	Other
1	\$ 43,377	0	0	\$12,800	\$5,000
2	\$ 44,678	0	0	\$13,184	\$5,150
3	\$ 46,018	0	0	\$13,580	\$5,305
4	\$ 47,399	4	\$ 83,546	\$13,987	\$5,464
5	\$ 48,821	4	\$ 86,052	\$14,407	\$5,628
Total	\$ 230,293		\$169,597	\$67,957	\$26,546
Grand Total	\$ 494,393				

ENROLLMENT REVENUE

4. General Fund: State Support

The general fund state support is calculated by assuming that general fund state support will be credited to the program in the final year of a student's studies. The state support is \$4,832 per resident FTE. The FTE per year is calculated by the FTE graduation rate. When the program reaches steady state, we anticipate 2 to 3 Colorado resident graduates per year. In the first five years of the program, we anticipate no graduates for the first three years, 2 resident graduates in the end of the fourth year, and 3 resident graduates at the end of year 5. The state support per year is given in Table A5.6 below.

Table A5.6: General Fund Support

Year 1	Year 2	Year 3	Year 4	Year 5
\$0	\$0	\$0	\$9,664	\$14,496

5. Cash Revenue: Tuition

The tuition calculation assumes four enrollments per year with two in-state and two out-of-state students. We assume that each student will take 15 credit hours per year. We have used \$7,254 as the full-time non-resident tuition rate per semester and \$2,057 as the full-time resident tuition rate per semester.

Table A5.7: **Tuition income**

Type of Tuition	Year 1	Year 2	Year 3	Year 4	Year 5
Instate	\$8,228	\$8,228	\$8,228	\$8,228	\$8,228
Out of State	\$28,016	\$28,016	\$28,016	\$28,016	\$28,016
Total	\$36,244	\$36,244	\$36,244	\$36,244	\$36,244

6. Requested Support from the Colorado Institute of Technology

In the proposal to the Colorado Technology Institute (CIT) entitled “Expansion and Integration of Information Technology Education at CU Denver”, we seek support for expanded undergraduate programs in Computer Science and Information Systems. The proposal seeks support for new faculty, new instructors, course development, and program directors. Although support for the joint Ph.D. proposal will not come directly from the CIT proposal budget, indirect support will occur through shared costs that benefit both undergraduate and graduate programs. Table A5.8 lists indirect revenue from the CIT proposal to cover items supporting both undergraduate and graduate programs including faculty costs, program management, course development, and the speaker series. All costs in the table have been inflated 3% per year except for the course development costs. The CIT proposal covers only the first year of support requested. We will seek support for the second and third years in subsequent requests to the CIT. Appendix 8 contains letters of support from the Dean of the College of Business and the chair of the CSE Department to fund costs after year 3.

Table A5.8: Indirect Support from the Colorado Institute of Technology

Type of Support	Year 1	Year 2	Year 3
Faculty salary plus benefits (IS: 116,650 + CSE: 100,233) * 0.2 FTE	\$43,377	\$44,678	\$46,018
Course development (\$10,000 per course)	\$30,000	\$30,000	
Speaker series	\$4,000	\$4,120	
Program co-directors salary plus benefits	\$12,800	\$13,184	\$13,580
Total Support	\$90,177	\$91,982	\$59,598
Grand Total	\$241,756		

7. Total Program Revenues

Table A5.9: Total Program Revenues

	Year 1	Year 2	Year 3	Year 4	Year 5
Tuition	\$36,244	\$36,244	\$36,244	\$36,244	\$36,244
General Fund	\$0	\$0	\$0	\$9,664	\$14,496
CIT	\$90,177	\$91,982	\$59,598	\$0	\$0
Total	\$126,421	\$128,226	\$95,842	\$45,908	\$50,740
Grand Total	\$447,136				

Attachment B

Enrollment Projections

DEFINITIONS:

Academic year is the period beginning July 1 and concluding June 30.

Headcount projections represent an unduplicated count of those students officially admitted to the program and enrolled at the institution during the academic year.

FTE is defined as the full-time equivalent number of those students majoring in the program, regardless of the classes enrolled, during the academic year.

Program graduate is defined as a student who finishes all academic program requirements and graduates with a formal award within a particular academic year.

SPECIAL NOTES:

To calculate the annual headcount enrollment, add new enrollees to the previous year headcount and subtract the number who graduated in the preceding year. Adjust by the anticipated attrition rate.

To calculate FTE, multiply the number of students times the projected number of credit hours students will be typically enrolled in per year and divide by 30.

The data in each column is the annual unduplicated number of declared program majors. Since this table documents program demand, course enrollments are not relevant and shall not be included in the headcount or FTE data.

Table A5.10: Enrollment Projections

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
1-a	In-state Headcount	2	5	7	8	8	8
1-b	Out-of-state Headcount	3	5	8	8	8	8
2	Program Headcount	5	10	15	16	16	16
3-a	In-state FTE	1.0	2.5	3.5	4.0	4.0	4.0
3-b	Out-of-state FTE	1.5	2.5	4.0	4.0	4.0	4.0
4	Program FTE	2.5	5.0	7.5	8.0	8.0	8.0
5	Program Graduates	0	0	0	5	5	5



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Attachment C

Office of the Vice President for Academic Affairs and Research

Campus Box 51
Boulder, Colorado 80309-0051
(303) 492-8911
FAX #: (303) 492-0330

MEMORANDUM

TO: Timothy Foster, Executive Director, CCHE

FROM: Michel R. Dahlin, Associate Vice President for Academic Affairs

DATE: January 18, 2002

SUBJECT: Quality, Capacity, and Cost Effectiveness of Proposed Ph.D. in Computer Science and Information Systems at University of Colorado at Denver

As part of the process of recommending a degree proposal to the Colorado Commission on Higher Education, the Office of the Vice President for Academic Affairs and Research for the University of Colorado system provides an analysis of the quality, capacity, and cost-effectiveness of full proposals. This memorandum provides that analysis. It is based upon review of the proposal and discussion with the Board of Regents and with involved campus faculty and administrators.

Quality of Proposed Program

The proposed program is a Ph.D. in Computer Science and Information Systems (CSIS) to be offered jointly by the Computer Science Department in the College of Engineering and Applied Science and by the College of Business. This program involves the study of information systems combining computing and management issues. The faculties in Computer Science and Information Systems have academic expertise and applied skills in these areas. The Colorado Institute of Technology's (CIT) support for the CSIS initiative at UCD is evidence of the quality of the faculty and its abilities in this new area. The curriculum is well chosen to provide both breadth and depth in this crossover field. It is rigorous, with significant attention to real-world problem solving. For example, each student's dissertation committee must have an industry representative.

Capacity of Institution to Offer Program

CIT financial support of CSIS will enable UCD to hire two new faculty, one in Business and one in Computer Science, to teach the new undergraduate CSIS curriculum that is being developed. This support will enable the University to reallocate faculty resources to free up existing faculty to teach in the Ph.D. program. Should CIT funding not be forthcoming, the campus will have to delay implementation of the program to allow for planned retirements and replacement hires in this area. With CIT support, UCD will be able to launch the program immediately. Planned retirements will enable the University to sustain the faculty hires in this area after CIT support ceases. There is adequate existing classroom and laboratory space for this program.
Quality, Capacity, and Cost-Effectiveness of CSIS

Cost-Effectiveness of the Program

This degree program builds upon existing strength in the Colleges of Business and Engineering. Courses that support other doctoral programs have space to accommodate the new students in this program. Collaboration in curriculum development and resource sharing that will occur in the undergraduate as well as the graduate CSIS program between the two colleges contribute to its efficiency. The expertise of area industry and business specialists will enrich the learning experience for students without additional cost to the institution.

Economic Impact

No major economic impact is claimed for this proposed new degree. However, the demand in this emerging area is evident in the strongly worded support of local business leaders and in the CIT endorsement. Program graduates should be able to find positions in existing businesses or to enhance their positions with their current employers.

Summary

UCD has provided the Board of Regents and the Vice President for Academic Affairs and Research evidence of its ability to offer the Ph.D. in Computer Science and Information Systems with appropriate academic rigor and excellent quality; it has provided evidence of its capacity to offer this program and of the program's cost effectiveness. The system administration and the Board both support the creation of the Ph.D. in CSIS.

TOPIC: PROPOSAL TO OFFER A BACHELOR OF ARTS IN SPECIAL EDUCATION AT METROPOLITAN STATE COLLEGE OF DENVER

PREPARED BY: SHARON SAMSON

I. SUMMARY

The Trustees of The State Colleges in Colorado request Commission approval to offer a Bachelor of Arts (B.A.) degree in Special Education at Metropolitan State College of Denver (MSCD). The institution designed this proposal to meet the new teacher education performance model, including focusing the content of the education courses on the new standards for special education developed by the professional society in this field.

The proposed Special Education degree will be the only undergraduate degree offered at Metropolitan State College of Denver that leads to Special Education licensure. Formerly, the Colorado Department of Education approved 22 MSCD degree programs leading to special education licensure. MSCD forecasts that 80 students will enroll in this degree program and 12 students will graduate at full implementation (Attachment A).

The content of the degree includes 66 credits of education courses, 24 credits in literacy, 38 credits in general education courses (Attachment B). With regard to the required field experience of 800 hours, the proposal outlines 633 in the special education classroom and 320 hours of field experiences in an inclusionary setting in an elementary or early childhood classroom. These courses are planned to be integrated experiences. Therefore, 953 (633 + 320) hours of special education field experience are required for this degree program.

The analysis of the proposed degree identified several strengths, including:

- Strong special education courses.
- Partnerships with school districts that support field experiences in special education.
- MSCD's Professional Development School in Special Education that offers an innovative program in reading and math programming for children with learning disabilities.
- A two-course assessment sequence that addresses the relationship between assessment and instruction for the special learner. Each assessment course requires 104 field-based hours.

CCHE staff recommend approving the request for a B.A. in Special Education at Metropolitan State College of Denver and granting Special Education teacher authorization with the understanding that applies to all teacher education proposals -- the institution will provide an assessment plan for general education by May 30, 2002.

II. BACKGROUND

The following section is summarized from the Metropolitan State College Bachelor of Arts in Special Education proposal. The Trustees of The State Colleges approved the proposed degree at its October 2001 meeting.

Metropolitan State College of Denver is a four-year college that provides teacher preparation at the undergraduate and post-baccalaureate level. It offers no graduate degrees. In 2000-01, Metropolitan State College of Denver recommended 11 teacher education candidates for Special Education licensure.

The proposed special education major provides a teacher education program to prepare students to meet the educational needs of children and adolescents with mild to severe disabilities. These learners range in age from 5 to 21. Within this major, special curricular emphasis would be given to communication, literacy, mathematics, assessment, instruction/adaptation, collaboration and transition. Graduates of the program would possess the knowledge and performance competencies to address the diverse needs of children and adolescents with mild to severe disabilities. The rationale for the development of this major is derived from a number of issues in special education that have influenced personnel preparation in this field:

- *Special education is a unique preparation program because it must address the K-12 range of educational needs as well as considerable variation in the manifestation of disabilities. Thus, special education teachers must possess significant knowledge and skills in developmental issues and instructional techniques for early childhood, middle childhood, adolescence, and adulthood.*
- *CDE's proposed Generalist Special Education Licensure Program (CDE, 1999), which will replace the Moderate Needs License, requires that special education teachers extend their competency base to meet the needs of students with severe disabilities as well as moderate educational needs.*

The proposed special education major provides the extended program of study that teachers will need to be successful classroom practitioners in varied educational environments. Preparing special education teachers who are also well-versed in general professional education will enhance their ability to meet the needs of students with disabilities in both special education and inclusionary settings. The curriculum for the program is designed, in part, to facilitate students obtaining dual licensure in special education and a level of general professional education, e.g., elementary education. This is particularly important considering the current inclusion movement that has significantly affected special education service delivery. If a teacher is licensed in both special education and a level of general professional education, then special education students can be included in the classroom without additional assistance from someone licensed in special education. In addition to general studies courses, a speech core provides the content necessary for early childhood and elementary education licensure. Students seeking licensure in a secondary field will

need to take additional coursework.

Program Goals

Program goals for the proposed major in Special Education would be based on the Performance-Based Standards for Colorado Teachers (2000), the Colorado Model Content Standards, the proposed Licensure Standards for the Special Education Generalist (1999), and NCATE/CEC standards. In addition, the proposed major would address the core standards for the Exceptional Needs Specialist set forth by National Board for Professional Teaching Standards (1997). The philosophical context for the standards for the Exceptional Needs Specialist suggests that there are critical aspects of practice that separate exemplary teachers from average teachers. The special education faculty supports the premise that teacher preparation programs should strive for excellence in all areas of training as opposed to the general goal of competence. The MSCD special education major would specify the following as preparation goals for all teacher candidates:

- 1) Teachers must be knowledgeable about literacy development in reading, writing, speaking, viewing, and listening; teachers will demonstrate ability to plan and organize reading instruction based on ongoing assessment.*
- 2) Teachers must be knowledgeable about mathematics and mathematics instruction; teacher will demonstrate ability to plan and organize mathematics instruction based on ongoing assessment.*
- 3) Teachers must be knowledgeable about strategies, planning practices, assessment techniques and appropriate accommodations to ensure student learning in a standards-based curriculum; and they must demonstrate ability to design and implement these procedures.*
- 4) Teachers must be knowledgeable in the content areas of civics, economics, geography, history, science, music, visual arts, and physical education; and demonstrate ability to apply this knowledge to enrich and extend student learning.*
- 5) Teachers must be knowledgeable about effective classroom practices and instructional management; and demonstrate ability to work collaboratively within learning communities to ensure successful education environments.*
- 6) Teachers must be knowledgeable of the needs and experiences of children and adolescents based on cultural, community, ethnicity, economics, linguistics, and exceptionalities; and demonstrate ability to adapt and differentiate instruction based on individual student need.*
- 7) Teachers must be knowledgeable and skilled in the use of technology; and demonstrate ability to apply technology to support and enhance student learning.*

- 8) *Teachers must be knowledgeable about the school's role in teaching and perpetuating our democratic system; and demonstrate ability to model and articulate the democratic idea to students.*
- 9) *Teachers must be knowledgeable about child and adolescent development; and demonstrate commitment to students and their learning needs.*
- 10) *Teachers must be knowledgeable about decision-making within diverse educational contexts; and demonstrate systematic thinking about their practice and the ability to learn from experience.*

Value to Student

The special education major would allow students the opportunity to develop more expertise than is afforded under the current system of preparation. Presently MSCD special education students are required to major in an academic area (e.g., such as history, sociology, English, or behavioral science) and study special education as a minor, which includes a professional licensure sequence. Thus, a significant portion of study is devoted to subjects outside of the realm of special education. A major in special education would permit students to concentrate their studies in the area in which they would be teaching, thus developing significantly more knowledge and performance competencies. The special education major would afford the opportunity to provide increased course work and field experiences in the areas of communication, literacy, mathematics, assessment, instruction/adaptation, management, collaboration, and transition. As previously indicated in this proposal, future special education teachers in the State of Colorado will need to be prepared to teach children and adolescents (age 5 to 21) with disabilities that range from mild to severe from ages 5 to 21. Developing the skills and expertise to meet the educational needs of these students will require an increased concentration of studies that can be provided with a special education major that includes courses in the academic discipline of speech, language and hearing sciences. As the special education major is directly aligned with the standards for special education teachers, it will be the only MSCD degree program leading to licensure in this area. An opportunity to obtain special education licensure will be made available to post-baccalaureate students who do not have a degree in special education.

If this major is approved, there will be a shift in enrollment from other academic majors into special education. Most students pursuing a special education licensure currently select behavioral science as a major. It is anticipated that these students will change their majors to special education. Since there are over 400 behavioral science majors, the impact of the special education major is expected to be minimal.

The current MSCD special education licensure program was developed in response to the critical need to prepare more teachers to meet the needs of children and adolescents with disabilities in this state. Prior to the passage of House Bill 96-1249, special education licensure was granted only to those teachers with graduate credit in this area of

specialization. The MSCD special education licensure program was developed as MSCD proposes to offer a Special Education major for Special Education Licensure candidates. The major consists of a common set of liberal arts courses and an emphasis in a content area that is one of the primary content standards for the elementary school curriculum. While this major best fits the needs of candidates enrolled in elementary education licensure programs, other students might find this major beneficial. The liberal arts core will provide a solid preparation in humanities, social sciences, science and mathematics and reading, writing and communication. The content area emphasis will address the depth as well as breadth needed for an interdisciplinary major. Licensure candidates will also complete general education requirements and a licensure sequence of courses and field experiences.

III. STAFF ANALYSIS

Because MSCD requested both degree approval and teacher authorization, the analysis is separated into two parts.

Part I: Analysis of the Degree Program. In reviewing the concept paper and program proposal, the staff considered role and mission, duplication, program need and demand, and quality issues such as curriculum and resources to meet the teacher education performance measures. Both the concept paper and full proposal were submitted to the other governing boards for peer review.

Role and Mission

The proposed special education major is consistent with both the institution's baccalaureate role and mission to serve the Denver MSCD area.

C.R.S. 23-54-101 Metropolitan State College of Denver is a comprehensive, baccalaureate institution with modified open admission standards...Metropolitan State College of Denver shall offer a variety of liberal arts and science, technical, and education programs. The college may offer a limited number of professional programs. Metropolitan State College shall offer no graduate programs.

Program Need and Demand

The proposed special education major would fill an identified need for the preparation of qualified teachers to meet the personnel shortage in this area. CCHE conducted a teacher education supply and demand study in 2000. The data indicate that special education is a shortage area in Colorado.

Program Quality and Resources

CCHE staff rely on active governing board involvement in evaluating the quality of the program, the capacity of the institution to offer the degree, and cost-effectiveness of offering the degree. The Trustees of The State Colleges have reviewed these criteria in depth and conclude that the proposed program adequately addresses quality, capacity, and cost-effectiveness were adequately addressed, including adequate resources (Attachment C). No additional faculty or space will be required to teach or administer the program.

Part II: Analysis of Teacher Education Performance Criteria.

This section of the analysis is based on the materials submitted in the proposal and the findings of the 2001 teacher education site review. In its analysis of teacher education proposals, the Commission's primary concern centers on the quality of the program and evidence that it will prepare quality teachers. CCHE examines the proposal for evidence of quality in three critical aspects of the program design – (1) content, (2) assessment, and (3) field experience. CDE reviews the proposal for evidence that graduates would master the skills identified in CDE's performance model. CDE recommended that the Commission consider the request for Special Education licensure given that the program design addresses the skills relevant to special education. It expressed reservations regarding reading and math literacy development. The following analyzes the proposal's content, assessment and field experience

Content

CCHE's Teacher Education Policy defines a quality teacher education preparation program as one characterized by a strong general education curriculum, coupled with a strong major. The former provides scope, the latter depth of knowledge.

A student enrolled in MSCD's Special Education, B.A. degree program is required to complete 128 credit hours. Unlike its degree programs that were authorized for elementary and secondary licensure, the Special Education major consists of education courses that are designed to prepare the Special Education teacher. Since the content knowledge is provided solely through the general education requirements, the content knowledge provided by this degree program is fairly limited. This may be appropriate, however, for a student who is preparing for a career in Special Education. Table 1 provides a general overview of the curriculum design. Table 2 lists the required Special Education courses. An analysis of the content knowledge of Special Education degree program is attached.

Table 1: Curriculum Design of the Special Education Degree

Curriculum	Credit Hours
General Education	38
ENG 1010 – Freshmen Composition – The Essay	3

ENG 1020 – Freshmen Composition – Analysis, Research & Documentation	3
MATH 1610-Integrated Math	3
MATH 2620- Integrated Math II	3
SPE 1010 - Public Speaking	3
SPE 3740 - Psychology of Communication	3
ART 2040 – An Integrated Approach to Art & Music	3
HIS 1210 – American History to 1865	3
SCI 2610 – Integrated Science	4
SCI 2620- Integrated Science II	4
GEG 1920- Concepts & Connections in Geography	3
PSC 1010 – American National Government	3
 Special Education Major	 45
 Speech Minor	 24
 Education Concentration	 21
 Total Credits	 128

Special Education Major

Sequence I Courses

SED 2200	3	Diversity, Disability and Education
SED 2400	2	Classroom Organization & Instruction
EDT 2890	2	Introduction to Adaptive Technology
SED 2700	3	Social/Emotional Development and Disorders
SED 2800	2	Evaluation and Program Planning: Severe Needs (15 hour lab)
SED 3600	<u>3</u>	The Exceptional Learner in the Classroom
	15	(15 field experience hours)

Sequence II Courses

SED 3700	3	Educational Exceptionality and Human Growth (15 hour lab)
SED 3800	3	Instruction and Standards: Elementary/Secondary (30 hour lab)
RDG 3110	<u>3</u>	Foundations of Literacy Instruction in Grades P-6 (early childhood students would substitute ECE 2340 and ECE 2350)
	9	(45 field experience hours)

Sequence III Courses

SED 4050	3	Evaluation and Program Planning: Moderate Needs (15 hour
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		lab)
SED 4200	3	Language Development and Reading Disabilities (30 hour lab)
SED 4250	<u>3</u>	Effective Behavioral Support Systems
	9	(45 field experience hours)

Sequence IV Classes

SED 4430	3	Assessment, Instruction & Collaboration Practicum: Elementary (104 hours)
SED 4440	<u>3</u>	Assessment, Instruction & Collaboration Practicum: Secondary (104 hours)
	6	(208 field experience hours)

Sequence V Courses (student teaching may occur in the elementary or secondary
classroom)

SED 4490	6	Special Education Student Teaching and Seminar: Elementary
OR		
SED 4500 <u>6</u>		Special Education Student Teaching & Seminar: Secondary
	6	(320 field experience hours)

TOTAL 45 (633 field experience hours)

Each student completes a concentration in of seven additional education courses that focus either in Early Childhood, Elementary Education or Secondary Education. These courses include an additional **380 hours of field experience**. MSCD confirmed that this student teaching assignment will be selected from classrooms that are “inclusionary,” emphasizing opportunities in which a classroom teacher and the special education teacher co-plan curriculum and co-assess student performance.

To address CDE’s concerns about a strong literacy component required in the Special Education classroom, MSCD requires its students to complete the following speech courses:

Required Courses

SPE 1500-3	Introduction to Communication Disorders
SPE 1610-3	American Sign Language I
SPE 2890-3	Language Acquisition
SPE 3570-3	Diagnostic Methods in Communications Disorders
SPE 3590-3	Classroom Intervention for Communication Disorders
SPE 3620-3	Aural Rehabilitation
THE 4220-3	Creative Dramatics
SPE 3540-3	Phonetics and Language Sample Analysis
OR	
SPE 4510-3	Language Disorders

TOTAL 24 HOURS

CCHE and CDE staff concur that the content of the Special Education major provides appropriate special knowledge and opportunities to develop the skills needed by Special Education teachers. It lacks the broad-based arts and sciences content courses needed for the dual licensure in Early Childhood or Elementary Education.

Assessment

CCHE adopted assessment criterion defines a quality teacher education preparation as one that provides strong assessment of student knowledge. Quality assessment encompasses three areas: (1) Information -- assessment of subject matter, (2) Integration - - assessment of knowledge of Colorado K-12 content standards, and (3) Application -- site-based assessment of teaching skills.

Information -- Candidate's knowledge gained from a comprehensive general education program and knowledge gained disciplinary preparation in subjects that will be taught in the classroom. The new design will assess basic skills using grades in English 101, 102 and the general education math course. Candidates will be required to take the Content PLACE Exam before student teaching begins. Because the curriculum revision includes field experiences in earlier and multiple courses, assessments will be designed to document a candidate's progress and growth in the program. Content knowledge, understanding and application items will be included on the instrument.

- 1) Since Colorado has adopted a performance-based teacher education model, it is essential that every approved teacher education program provide assessment data on the content knowledge of prospective teachers. MSCD still in the process of developing its assessment plan for general education
- 2) Integration – Candidate's knowledge of elementary content standards and teaching skills.

The PLACE content examination for Special Education measures the candidate's knowledge of special education pedagogy. However, the real assessment will occur in the field. Metropolitan State College's Special Education Major is designed to be standards-based. In order to assess proficiency in the standards and standard elements, teacher candidates are expected to demonstrate those proficiencies in field settings.

Field Experience.

In CCHE's Teacher Education Policy, the field experience criterion defines one dimension of teacher education quality as substantial clinical training that occurs under the direct supervision of expert teachers. It is measured both quantitatively, i.e., a minimum of 800 hours that begins early in the academic program, and qualitatively, i.e., the focus, scope and intensity of the field experience.

MSCD's Special Education program provides two types of field experiences – 348 hours in an inclusionary setting (in which special education students are placed in a regular classroom) and 633 hours are in the special education classroom or working with special education students. The quality of the field experience meets CCHE's policy criteria of focus, scope and intensity. All field experience requirements have predetermined learning objectives and are tied to knowledge-based or performance-based outcomes, depending upon the level of the particular school experience.

Each of the field experience components provides candidates an opportunity to engage with children and/or professional teachers in the school setting. The predetermined learning objectives within each field experience component build upon the former experience, thus enabling the candidate to demonstrate each of the desired outcomes at the basic, developing and proficient levels. Documentation of performance will be provided as part of the course requirements. The candidate will provide an artifact showing a required performance task in a "Teacher Work Sample," which is to be completed both prior to student teaching and during student teaching. Those artifacts and demonstrated performance tasks must be assessed at the proficient level in order to receive recommendation for licensure.

There is a significant emphasis on assessment of teacher candidates within field experience settings. Field experience requirements range in intensity from 15 hours per class to 640 hours in the capstone student teaching experience. In beginning field experiences, teacher candidates are evaluated in terms of personal characteristics (e.g., professional behavior, reliability, punctuality, oral/written communication, and appearance, etc.). As the level of difficulty increases, so do expectations for demonstration of teaching and assessment skills. For example, in SED 4440 Assessment, Instruction & Collaboration Practicum: Secondary, the field experience that precedes student teaching, students must attend parent teacher conferences, while in SED 4500 Special Education Student Teaching and Seminar: Secondary, the students are required to actively participate and demonstrate problem-solving skills.

IV. STAFF RECOMMENDATION

That the Commission approve the request of the Trustees of The State Colleges of Colorado to offer a Bachelor of Arts in *Special Education* at Metropolitan State College of Denver and grant the degree program Special Education teacher authorization with the understanding that applies to all teacher education proposals -- the institution will provide an assessment plan for general education by May 30, 2002.

Attachment A

Table 1: Enrollment Projections

		2001-02	2002-03	2003-04	2004-05	2005-06	Full Implementation
1-a	In-state Headcount	67	67	68	70	74	80
1-b	Out-of-state Headcount						
2	Program Headcount	67	67	68	70	74	80
3-a	In-state FTE	36.4	36.6	37.2	38.1	40.3	43.5
3-b	Out-of state FTE						
4	Program FTE	36.4	36.6	37.2	38.1	40.3	43.5
5	Program Graduates			5	8	11	12

The following premises were used in determining the enrollment projections.

1. There are currently 58 active students who have been provisionally admitted or formally admitted to the special education licensure program at MSCD. Another 21 students are listed in faculty files as pursuing special education licensure, but they are either not coded properly or are not currently enrolled. Approximately one-third of these students have previous degrees; thus it is assumed that about 50 current students would want a special education major if it were currently available. In addition, another 45 are seeking dual licensure in special education and either early childhood or elementary education, and it is assumed that approximately 15%, or approximate 7, of these students might be interested in a special education major. Combining the two, it is estimated that the program could anticipate having at least 57 students at a minimum.

There are approximately 25 students who are seeking a special education minor but are not listed as being interested in licensure. Although these students are a source of possible majors, their number has not been used in the estimation of projected enrollments. Growth in the program is anticipated because school district incentives for new teachers aimed at reducing the personnel shortage in special education should boost program enrollment.

2. It is assumed that there will be no out-of-state students because currently only 3% of MSCD students are out-of-state. The number of out-of-state students interested in the Special Education Program will be negligible.
3. The retention/persistence rate of majors from year to year is assumed to be 63% because 62.5% of the students seeking special education licensure in 1998 were retained and the overall retention rate for the college is 64.1%. The special education data comes from one small sample.
4. An anticipated graduation rate was determined as follows. Approximate 12% of all MSCD degree-seeking students graduate each year. The average graduation rate over a five-year

period of students with a special education minor was 19%. That is the graduation rate for the minor, not a major. Combining the information, it was assumed that 15% of the students would graduate in any one year. The projected graduates in year three and beyond are based on the assumption that some of the students currently seeking special education licensure or a minor in special education will switch to the degree program. The numbers for years 3 and 4 are lower than what would be obtained using 15% since MSCD is uncertain how many students will switch from their current academic path. New students will not be able to finish in three years.

5. MSCD students take 16.32 credits on average each academic year.
6. The number of students entering the program was estimated to start at 10 the first year and increase to 30 by the time of full implementation.
7. The above assumptions lead to the projections shown in Table 1. At full implementation there will be approximately 80 majors in the program with approximately 12 graduating each year. It should be noted that these projections are conservative estimates based on current enrollment statistics. Even though MSCD is seeking approval for this major as appropriate for both early childhood and elementary education licensure enabling students to teach in inclusionary classrooms, the projections were based on the assumption that students would receive only special education licensure.

Attachment B

MSCD SPECIAL EDUCATION, B.A.

Special Education Licensure

CURRICULUM	Credits
General Education	38
Special Education Major	45
Education Concentration	21
Speech minor	24
GRADUATION REQUIREMENTS	128

Students who complete a Special Education degree at MSCD are required to enroll in 14 classes (39 credits) plus Student Teaching (6 credits)

SED 2200	3	Diversity, Disability and Education
SED 2400	2	Classroom Organization & Instruction
EDT 2890	2	Introduction to Adaptive Technology
SED 2700	3	Social/Emotional Development and Disorders
SED 2800	2	Evaluation and Program Planning: Severe Needs
SED 3600	<u>3</u>	The Exceptional Learner in the Classroom
SED 3700	3	Educational Exceptionality and Human Growth
SED 3800	3	Instruction and Standards: Elementary/Secondary
RDG 3110	<u>3</u>	Foundations of Literacy Instruction in Grades P-6
SED 4050	3	Evaluation and Program Planning: Moderate Needs
SED 4200	3	Language Development and Reading Disabilities
SED 4250	<u>3</u>	Effective Behavioral Support Systems
SED 4430	3	Assessment, Instruction & Collaboration Practicum: Elementary
SED 4440	<u>3</u>	Assessment, Instruction & Collaboration Practicum: Secondary

In addition, students must enroll in 8 speech courses (24 credits).

SPE 1500	3	Introduction to Communication Disorders
SPE 1610	3	American Sign Language I
SPE 2890	3	Language Acquisition
SPE 3570	3	Diagnostic Methods in Communications Disorders
SPE 3590	3	Classroom Intervention for Communication Disorders
SPE 3620	3	Aural Rehabilitation
THE 4220	3	Creative Dramatics
SPE 3540	3	Phonetics and Language Sample Analysis
or		
SPE 4510	3	Language Disorders

Content Analysis:

The curriculum requirements specified in MSCD's Special Education degree program ensures that students are familiar with content knowledge in reading, mathematics, writing, and expressive forms of communication (Areas in which the special education teacher is the primary educator), basic knowledge in science and social studies (in which the classroom teacher provides the content depth and the special education teacher guides the individual), and in-depth knowledge of human behavior, including cognition, the learning process, assessment of learning difficulties, and human development.

- Knowledge of language and speech disorders (Language Acquisition, Phonetics and Language Sample Analysis, Introduction to Communication Disorders, Classroom Intervention for Communication Disorders, Diagnostic Procedures in Communication Disorders).
- Knowledge of expressive forms of communication, including speaking, reading, and writing (Freshman Composition, Public Speaking, Advanced Composition, Creative Dramatics for the Classroom Teacher, Integrated Art and Music).
- Ability to write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling. (Freshman Composition, Public Speaking).
- Apply thinking skills to reading, writing, speaking, listening, and viewing.
- Understanding that literature is a record of human experience.
- Knowledge of number systems, algebra, and geometric concepts (Integrated Mathematics I-II).
- Ability to use a variety of tools and techniques to measure, apply the results to problem solving situations, and communicate the reasoning used in the situations (Integrated Mathematics I & II).
- Knowledge of social studies (Geography, American Government, US History I)
- Knowledge of scientific concepts and methods of scientific inquiry (Integrated science I & II)
- Knowledge of normal child growth and development in terms of physical, communicative, psychological and social/emotional functioning and identifiable deviations from normal growth and development (Psychology of Communication, Social/Emotional Development and Disorders, Language Development and Reading Disabilities, Language Acquisition, Phonetics and Language Sample

Analysis).

- Knowledge of the principles and practices of diagnosis, including formal and informal assessment techniques, interpretation and application of assessment (Evaluation and Program Planning: Severe Needs, Evaluation and Program Planning: Moderate Needs, Diagnostic Methods in Communications Disorders, Introduction to Adaptive Technology).
- Knowledge and understanding of cognition, effects on learning, and processing problems that interfere with learning (Educational Exceptionality and Human Growth, Language Development and Reading Disabilities, Language Acquisition, Language Disorders).

The special education major appears well planned. It integrates knowledge of human development, principles for defining and adapting student learning goals, and ways to assess a student's progress in attaining the goals. This is consistent with the national professional society's standards in Special Education.

The required speech courses appear somewhat duplicative to certain education courses (e.g. SPE 2890 Language Acquisition and SED 4200 Language Development and Reading Disabilities,). Other courses appear too specific for an entry-level special education teacher (e.g., Aural Rehabilitation and American Sign Language). A person typically would enroll in Aural Rehabilitation if specializing in speech pathology. Teachers often chose to take American Sign Language during induction or a continuing education course, a choice of many more experienced practitioners. Some speech courses appear too general (e.g., Introduction to Communication Disorders since its syllabus indicates that it is an exploratory course). If the intent of the 24-credit minor is to improve the literacy and reading skills of the special education teacher, other MSCD courses may be more appropriate.

The Special Education curriculum is a good base for this degree. It is strong enough to support the Special Education licensure. Because this is a new design it would be appropriate to give technical support on some unresolved curriculum issues in the supporting courses and the advising documents.

Conclusion:

MSCD's Special Education degree program provides students seeking Special Education licensure with the appropriate content knowledge.

Attachment C

Table 2: Physical Capacity Estimates

There are no additional physical capacity costs to implement the special education major.

Table 3: Projected Expenses and Revenue Estimates

Faculty Expense:

1. The average full-time faculty salary, including benefits, for special education faculty is \$56,503. There are currently three full-time faculty in the program, and six or seven adjunct faculty are needed each semester. This proposal is contingent upon hiring a fourth full-time faculty member and assumes the need for adjunct faculty would be reduced to two or three each semester. In addition to providing courses for the major, special education faculty offer approximately 18 sections (9 per semester) of a special education service course - SED 3600 – that is required of all licensure students each year. Assuming that regular faculty teach 8 courses a year, then more than two faculty are needed to support the service courses. For the purposes of estimating the faculty expenses of this program, MSCD assumed 3.5 FTEF would be needed to implement the program. The faculty needed to offer the service courses are not included in the computations.
2. *Financial Aid:* The only type of financial aid that counts in this category is Colorado Scholars. The Financial Aid Office has stated that it will probably allocate \$2,000 a year to a new program. This allocation may not occur until the second year.
3. *Instructional Materials:* It is estimated that \$1,000 will meet this need.
4. *Program Administration:* Three hours of reassigned time each semester will be given to administer this program. Replacing that faculty member with adjunct faculty will cost \$ 4,062.
5. *Equipment acquisitions:* No additional expenses are anticipated.
6. *Library:* No additional expenses are anticipated.
7. *The General Fund:* State Support Revenue line was generated by multiplying the in-state FTE by \$3,400 – the current appropriation.
8. MSCD charges tuition per credit hour. It was assumed that students in the Special Education Program would be taking eight hours a semester (half of the 16.32 credits that MSCD students take on average each academic year). At the present time a student taking eight hours pays \$589.20 in tuition. The Cash Revenue: Tuition was determined by multiplying the program headcount by two times \$590.

Table 3: Projected Expense and Revenue Estimates

		Estimated Amount in Dollars				
		Year 1	Year 2	Year 3	Year 4	Year 5
Operating Expenses:						
1	Faculty	\$ 197,761	\$ 197,761	\$ 197,761	\$ 197,761	\$ 197,761
2	Financial Aid specific to program	\$ -	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
3	Instructional Materials	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
4	Program Administration	\$ 4,062	\$ 4,062	\$ 4,062	\$ 4,062	\$ 4,062
5	Rent/Lease					
6	Other Operating Costs					
7	Total Operating Expenses	\$ 202,823	\$ 204,823	\$ 204,823	\$ 204,823	\$ 204,823
Program Start-Up Expenses						
8	Capital Construction					
9	Equipment Acquisitions					
10	Library Acquisitions					
11	Total Program Start-Up Expenses					
TOTAL PROGRAM EXPENSES		\$ 202,823	\$ 204,823	\$ 204,823	\$ 204,823	\$ 204,823
Enrollment Revenue						
12	General Fund: State Support	\$ 123,923	\$ 124,312	\$ 126,406	\$ 129,575	\$ 137,120
13	Cash Revenue: Tuition	\$ 79,060	\$ 79,308	\$ 80,644	\$ 82,666	\$ 87,479
14	Cash Revenue: Fees					
Other Revenue						
15	Federal Grants					
16	Corporate Grants/Donations					
17	Other fund sources*		\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
18	Institutional Reallocation *					
TOTAL PROGRAM REVENUE		\$ 202,983	\$ 205,619	\$ 209,050	\$ 214,241	\$ 226,600

Resource Impact on Instructional Technology and Library Resources

No additional technology or library needs are associated with this proposal.

Source of Resources

Other Fund Sources: the Financial Aid Office has stated that it will allocate \$2,000 a year to the new program. This allocation probably will not occur until the second year.

**TOPIC: FRONT RANGE COMMUNITY COLLEGE PROPOSAL TO
RELOCATE COLORADO ADVANCED PHOTONICS
TECHNOLOGY CENTER FROM FORMER HEAT CENTER**

PREPARED BY: JEFF RICHARDSON

I. SUMMARY

Commission approval is requested of the Front Range Community College amended program plan for the Colorado Advanced Photonics Technology Center (CAPT). The amended plan is to relocate the CAPT Center from its present location at the former Higher Education Advanced Technology (HEAT) Center at the former Lowry Air Force Base to leased facilities in Longmont. Tenant improvements at the new facility will be financed using existing CCFE appropriated to the project in Fiscal Year 1999. Moving expenses and lease payments will be paid out of existing CAPT Center operating funds. The amended plan was approved by the State Board for Community Colleges and Occupational Education on February 13, 2002. Subsequent to approval by the Commission, the plan will be submitted to the Capital Development Committee of the General Assembly for final approval.

II. BACKGROUND

The CAPT Center was created in 1997 as a cooperative effort between University of Colorado, CCCOES and the Colorado Advanced Technology Institute (CATI). The program was collocated with the Pueblo Community College's Photonics/Vacuum Technology Program at Building 901 of the HEAT Center. In the arrangement, CATI provided the funding, CU provided the procurement administration and CCCOES became the landlord. In return, the CAPT Center has heavily participated in the development of the Community College Photonics/Vacuum Technology Program and will ultimately provide internships to community college students as the capstone experience towards an Associate Science Degree.

The CAPT Center has been a success story. The CAPT Center has served over 60 member organizations over the last two years. The CAPT Center has achieved nearly 5,000 student contact hours and is over 45% self-funded at this time with a goal of 60% in FY 2004.

Subsequently, the following events have occurred:

1. CATI was legislatively dissolved and folded under the authority of the Colorado Commission on Higher Education.
2. The Photonics/Vacuum Technology Program was transferred from PCC to FRCC.

3. FRCC is in the process of moving their program from HEAT to a Longmont location.
4. Community College of Aurora has taken over occupancy of all space in Building 901 except for the CAPT Center space. They have expressed a desire to occupy the whole building.

The Proposal

FRCC is proposing to move the CAPT Center to Longmont to be closer to the FRCC academic program to maintain the original relationship between the two programs and to get closer to the geographic center of the photonics industry in the state.

All costs of relocation will be covered under existing appropriations and budgets. No new funds will need to be appropriated or allocated. There are three costs associated with relocation: 1) the cost of physically moving, 2) the cost of tenant modifications, 3) and incremental operating costs associated with the new lease.

- The cost of moving the CAPT Center (estimated to be in the range of \$29,000-\$39,000) will be paid out of existing CAPT Center operating reserves.
- The cost of tenant modifications (estimated to be between \$69,000 and 99,000) will be paid by funds from the original CAPT Center CCFE appropriation of \$4.8 million, which has a current unexpended balance of \$380,000 and an expiration date of December 2002.
- Incremental operational expenses due to increased lease payments (\$26,400 annually) will be offset by increased utilization revenues.

III. STAFF ANALYSIS

CCHE staff have completed a Lease/Renovation Program Plan Evaluation FY 2002-03 for the FRCC amended facilities plan for the CAPT Center relocation. Relocation of the program is justified from a programmatic standpoint. However, final approval of the program plan amendment rests on the Capital Development Committee of the Legislature approving the reallocation of \$68,000 to \$99,000 of the approximate \$381,461 CCFE in uncommitted funds to leasehold improvements at the leased property in Longmont and to approving the relocation of the program from HEAT Center at Lowry to Longmont. (The State Controller approved an 18-month extension in the expenditure of CCFE funds in July 2001, meaning the CAPT Center has until December 2002 to expend the funds.)

IV. STAFF RECOMMENDATION

That the Commission approve the Amended Facilities Program Plan submitted by FRCC and approved by SBCCOE for the relocation of the CAPT Center with the understanding that all costs associated with the move will be covered within the existing CAPT Center CCFE appropriation and the operating CAPT Center budget, and with the further understanding that approval by the plan must also be obtained from the Capital Development Committee of the General Assembly before the move can be initiated.

Appendix A

STATUTORY AUTHORITY

C.R.S. 23-1-196.5. Duties and powers of the commission with regard to advanced technology.

C.R.S. 23-1-106.6. Duties and powers of the commission with respect to technology transfers.

TOPIC: WESTERN STATE COLLEGE REQUEST TO INCREASE NON-RESIDENT TUITION BY AN ADDITIONAL \$200 – FY 2003 CCHE BUDGET REQUEST

PREPARED BY: JAMES JACOBS

I. SUMMARY

Western State College proposes to increase non-resident tuition by an additional \$200 or about 2.5%. This would be above any inflationary increase approved by the General Assembly.

II. BACKGROUND

Part II was submitted by The Trustees of the State Colleges as Western State College's request:

PROPOSED SPECIAL INCREASE IN NON-RESIDENT TUITION RATES
AT WESTERN STATE COLLEGE

Western State College has projected a FY2002-03 budgetary shortfall of \$1,712,147. They propose to address this problem on the revenue side through additional monies generated from a "special" non-resident tuition increase. On the expenditures side, they have undertaken various budgetary cuts.

It is important to note that the \$1.7 million shortfall already includes tuition revenue generated on projections of FY2002-03 enrollment at Western, with the assumptions that the General Assembly will approve a CPI increase on current resident and non-resident tuition rates.

Following is a breakdown of the budgetary "solution":

I. Revenue: 2.5% Non-resident Tuition Increase	\$ 119,600
II. Expenditure Reductions: Staff Reductions	\$1,241,708
III. Expenditure Reductions: Operating Budget Reductions	<u>\$ 383,760</u>
	\$1,745,068

This would leave a "margin" of \$32,921.

For FY2002-03, Western is projecting a FY2002-03 non-resident enrollment of 598 FTE. The requested AY tuition rate increase per FT FY03 student is \$200; 598 FTE * 200 FTE = \$119,600. This amount is *not* additional FY03 *net* revenue over FY2001-02: It is

simply the revenue that would be collected with a \$200 per FTE FY03 tuition increase for the projected non-resident FY03 student FTE at Western. While it may seem to be a small dollar amount in the context of a \$1.7 million problem, it will help Western enormously if the institution can turn around its non-resident enrollment decline. The fact remains that the lion's share of Western's FY2002-03 budget readjustment has been achieved through permanent base budget cuts generated primarily through staff reductions (layoffs, retirements, and resignations), and some operating budget cuts.

Tuition levels are set by governing boards within limits established by the legislature. TABOR's limits on state revenues make it necessary for the legislature to control cash revenues as well as tax revenues. As part of doing so, it has been the legislature's practice to use the Long Bill to establish maximum allowable tuition percent increases. However, the legislature has also, in each year since 1995, approved specific institutional exceptions to these limits. For example, in 1995 and 1996 Metro State was allowed to increase its tuition higher than the statewide limits. In 1997, the University of Colorado was allowed to increase some of its tuition rates (e.g. Law School) above the statewide limits. In 2001, CU-Denver was allowed a special increase to its College of Liberal Arts and Sciences tuition.

RATIONALE FOR WESTERN'S REQUEST:

Non-Resident Tuition at Western

Western State College attracts large numbers of non-resident students. This year, 29% of Western's students are from out of state. Fewer than 100 students at Western come from the Gunnison area.

Though Western State College has one of the highest non-resident student ratios in Colorado, its out-of-state tuition is among the lowest. There is strong evidence that a tuition increase, beyond what is annually authorized by the Colorado legislature, would not be considered significantly less affordable by the parents whose sons and daughters choose Western.

Western's Need for Additional Revenue

There is no question that the revenue generated from such a tuition increase would help maintain and enhance the quality of education that Western is able to provide. In particular, Western would address faculty retention issues that center on salary limitations. Western State College is experiencing increasing difficulty in hiring and retaining faculty members. The cost of housing in Gunnison has risen dramatically, and is beyond the reach of most new, single income, faculty members. The College must respond to this challenge by obtaining more resources or it risks losing its human capital, its most important asset.

Issues

There are several important issues to address when considering whether to authorize Western to raise tuition:

1. *Quality.* Are the students getting a fair return on their investment?

Yes. The quality of instruction, small class sizes, student services, location, and, increasingly, facilities, compare favorably with other public colleges and universities throughout the country, and Western's education is comparable to a high quality private institution.

2. *Ability to pay.* Will the students at Western, or prospective students, be *able* to pay increased tuition at the rates that Western is proposing?

Western believes that the answer is Yes. No college or university has complete information on family incomes of its students because not all parents apply for financial aid, which would require they provide such information. However, Western has very persuasive evidence that the families of their students can pay higher tuition.

Listed below are the median incomes of those out-of-state families whose entering freshmen sons or daughters applied for financial aid at the four State Colleges in Colorado:

Adams State College	\$ 8,733
Mesa State College	\$50,430
Metro State College	\$16,696
Western State College	\$85,996

Of the approximately 625 out-of-state students at Western State College, only about 42% of those families applied for financial aid. Because the limited availability of need-based financial aid is virtually universally known among middle- and high-income families, Western is confident that the families that did not apply for aid had, on average, higher income levels than those that did.

Like every other college in the country, Western attracts students whose families apply for and receive financial aid, and whose sons and daughters receive need-based and merit-based scholarships. Western aggressively and successfully seeks private contributions to help those families needing financial aid.

3. *Willingness to pay.* Will the students at Western, or prospective students, be *willing* to pay increased tuition at the rates that Western is proposing?

Western believes that the answer is Yes. Because Western competes for non-resident students with other colleges and universities throughout the country, parents and prospective students compare the College's non-resident tuition with other institutions. Western's rates compare favorably, and would continue to compare favorably even with a significant tuition increase.

Student fees at Western State College are higher than their counterpart colleges in Colorado for two reasons. First, because Western is almost entirely a residential college, the College provides more student services for a population that does not commute to the campus. Second, Western's students have initiated fee increases, and approved them overwhelmingly in recent years.

In 1997 Western students voted to raise the computer services fee from \$25 to \$84 per year. In 1999 students authorized an optional fee of \$10 per semester to support the acquisition of fitness center equipment and upgrades. In Spring 2000 they voted an increase of \$71: \$20 for Union operations; \$43 for the Student Government Association; and \$8 for an alternative energy fee.

Western State College primarily serves a traditional college-age population of recent high school graduates whose parents, for the most part, pay their tuition. Families who send students to Western are also prepared to pay the approximately \$5,900 for room, board, books, and the cost of transportation.

There is strong evidence that the current tuition and fee structure is not causing an excessive burden on Western's students. Their federal loan default rate is 2.8% and declining. This is among the lowest default rates in the state and is comparable to the University of Colorado-Boulder (3.4%) and Colorado State University (2.8%).

Western is among the lowest in out-of-state tuition and fees, higher only than Mesa State College and Adams State College. Ft. Lewis College, an institution with a high percentage of non-resident students, charges almost \$1,200 more per year than Western. The University of Southern Colorado, serving many students from families of modest incomes, has a non-resident tuition of about \$800 more than Western's. Even Metropolitan State College of Denver, the only four-year college in Colorado with an open admissions policy specifically designed to serve the lowest income students in Colorado, charges over \$300 more per year than does Western State College.

3. *Non-Resident Enrollments.* How will the proposed tuition increase affect Western's declining non-resident enrollments?

Western believes that the proposed tuition increase will have a minimal effect on non-resident enrollment. Western's decline in non-resident enrollment during the past five years appears to be due both to recruitment and retention issues. The first chart below shows the decline in non-resident enrollment over the last five years, broken out by level. The second chart shows retention of non-resident students by entering year. Western has a plan in place to address both of these areas: the first by aggressive and targeted marketing, and the second by addressing student life and academic advising issues. Western State College primarily serves a traditional college-age population of recent high school graduates whose parents, for the most part, pay their tuition. This is a group that historically has required greater investment of college advising and student life resources to stay focused academically.

Western also recognizes that the college experience extends beyond the classroom, and that a key to student retention is providing excellent service in all areas of the institution, including academic, administrative, and student services and programs. Western participates in the American College Test (ACT) standardized evaluation survey to measure student satisfaction with each of these areas. In the fall of 2001, Western surveyed a random sample of students and 378 returned surveys which were sent to ACT for scoring. ACT compared Western with a database of 62,262 students at Public Colleges across the nation who participated in the survey. Western outperformed the Public College comparison group far more than the Public College comparison group outperformed Western (29 to 1), and Western outperformed in all three areas. The most revealing question on the ACT Satisfaction Survey asked the students about their satisfaction with “this college in general”. With 376 students responding to the question, Western outperformed the Public College sample at a statistically significant .001 level. This is a good start.

Non-Resident FTE at Western					
	1996-97	1997-98	1998-99	1999-00	2000-01
Freshmen	261.1	252.5	235.8	238.9	187.4
Sophomores	202.4	199.0	176.1	151.9	154.7
Juniors	139.3	149.8	151.2	151.3	128.0
Seniors	135.0	131.7	125.3	117.6	147.7
Others	18.1	13.2	8.7	21.0	22.5
TOTAL	755.8	746.2	697.0	680.7	640.3

Non-Resident Retention at Western - Headcount					
Entering Yr	1st Yr	2nd Yr	Ret. Rate	3rd Yr	Ret. Rate
	Enrolmt	Enrolmt		Enrolmt	
1992	305	144	47.21%	87	28.52%
1993	246	118	47.97%	81	32.93%
1994	232	114	49.14%	78	33.62%
1995	226	120	53.10%	83	36.73%
1996	241	141	58.51%	101	41.91%
1997	189	93	49.21%	71	37.57%
1998	199	100	50.25%	65	32.66%
1999	169	93	55.03%	68	40.24%
2000*	154	66	42.86%		

Rationale

Because of the recent economic downturn, there is greater uncertainty than usual about how much state tax support will be extended to Colorado higher education in the 2002 legislative session. For example, the Legislature may reduce its tax support and authorize a larger tuition increase. This uncertainty, and the almost \$1,200 difference between the tuition and fees charged by Ft. Lewis College and Western State College, results in Western's request that the Board of Trustees seek authorization from CCHE and the Legislature to permit Western State College to increase tuition, over a negotiated number of years, to approximate the tuition charged by Ft. Lewis College. Ft. Lewis is recommended as a benchmark because its students most closely resemble the students at Western State College.

Fiscal Impact

As a starting point, a tuition increase of \$200 per FTE for the 2002-03 AY would permit the College to assess Western's students and their family members' willingness and ability to absorb tuition increases. Enrollment projection is far from an exact science, but Western's staff has provided three non-resident FTE projections for FY2002-03, based on different assumptions. The three figures are 565, 598, and 618 non-resident FTE. If the 598 figure is acceptable as a midway figure, then the additional revenue generated from a \$200 increase in FY2002-03 tuition for non-resident students would be \$119,600. The \$200 increase represents an increase of about 2.5% over the 2001-02 AY non-resident tuition rate at Western.

III. STAFF ANALYSIS

There are three important issues to analyze in this request. The first concerns the overall budget situation at Western State College. The second issue is enrollment changes at Western. The third issue compares Western State's tuition and fees with the other four-year institutions in the state. The first issue concerns the overall FY 2002-2003 budget for Western State College. College officials have estimated an overall budget shortfall of \$1.7 million for FY 2003. In order to balance the budget they have proposed a number of actions: a) additional revenue from non-resident students – this request – at about \$100,000; b) staff expenditure reductions of 28.0 FTE – a savings of \$1.2 million; c) other reductions of about \$400,000. This tuition increase accounts for only a small percentage of the overall budget shortfall. It does, however, recognize that the solution includes actions outside of the state's general fund.

This first table shows enrollment changes for both resident and non-resident FTE students between 1992 and 2001. The focus here is on the non-resident enrollment which may be negatively impacted by the tuition increase. Non-resident FTE also declined in that year, dropping by 9%. Since the high mark of 1993 non-resident FTE fell by 200. The number of non-resident FTE students has declined in seven of the past nine years and in each of the past five years. The proportion of non-resident FTE students has also decreased, falling from a high of 35.4% in 1994 to 30.9% in 2001. The estimate of the number of non-resident students for FY 2003 is 598. This coincides with the decline shown in the past few years.

Western State College					
FTE Enrollment Changes, Resident and Non-Resident					
	Resident		Non-Resident		<i>NR Share</i>
	% Change		% Change		
1992	1,584		767		32.6%
1993	1,602	1.1%	840	9.5%	34.4%
1994	1,393	-13.0%	764	-9.0%	35.4%
1995	1,417	1.7%	744	-2.6%	34.4%
1996	1,460	3.0%	766	3.0%	34.4%
1997	1,525	4.5%	755	-1.4%	33.1%
1998	1,478	-3.1%	746	-1.2%	33.5%
1999	1,501	1.6%	697	-6.6%	31.7%
2000	1,499	-0.1%	680	-2.4%	31.2%
2001	1,432	-4.5%	640	-5.9%	30.9%

SOURCE: CCHE, Final Student FTE Report, July 2001

The second table compares non-resident tuition and fees for Colorado’s four-year public institutions for FY 2002. Western State was third from the bottom in terms of tuition and third from the bottom in tuition and mandatory fees combined. This was in spite of having the highest fees among the state’s four-year universities and colleges. An increase of \$200 in non-resident tuition would not change Western State’s placement as third lowest of the institutions.

This proposal is projected to increase revenue to Western State by about \$120,000 for FY 2003. While this amount may be important, it will not generate significant revenues to the college. Western State has projected receipts of \$2.57 million in resident tuition and \$5.04 million in non-resident tuition for FY 2002. The data presented by Western State College indicate that the students could well afford this increase in terms of their family income. If this proposal helps to renew efforts to attract out-of-state students it may well serve as a basis for turning around the enrollment decline. If, on the other hand, student

enrollment, both resident and non-resident, increases are not generated, revenue stability to the college could be in jeopardy.

Non-resident Tuition and Fees, FY 2001-2002			
	Tuition	Fees	Total
UCB	\$ 16,624	\$ 743	\$ 17,367
CSM	16,070	681	16,751
UCD	12,224	444	12,668
UCCS	11,196	767	11,963
CSU	10,944	750	11,694
UNC	9,825	656	10,481
USC	9,220	532	9,752
Fort Lewis	8,874	728	9,602
Metro State	8,270	520	8,790
Western State	7,672	801	8,473
Mesa State	6,515	600	7,115
Adams State	6,268	642	6,910
SOURCE: CCHE, <i>FY 2002 Tuition and Fee Survey</i> , Tables 5 and 10, based on 30 credit hours; October 2001			

In 2000, CCHE commissioned a pricing study which analyzed the relationship between tuition and enrollment. In general, there is a decrease in enrollments following tuition increases. This is most significant with low-income students. The information in this proposal indicates that family income of out-of-state students at Western State exceeds median rates by a high margin. As a result, there may not be the decline in enrollments that would be experienced at other institutions, especially those with large numbers of low-income students. Finally, depending upon Colorado's economic condition during the next year and on some proposed accounting changes, there may be some extra room to maneuver some tuition increases so that they do not exceed the TABOR general and cash fund limitations.

IV. STAFF RECOMMENDATION

That the Commission approve the \$200 increase in non-resident tuition for FY 2003. Such an increase would be above any inflationary increase adopted by the general assembly. Staff would also recommend that approval of future non-resident tuition increases be examined after assessing changes in enrollment and retention rates for

non-resident students.

STATUTORY AUTHORITY

23-1-105 (2) The commission shall make annual systemwide funding recommendations, after consultation with the governing boards of institutions, for the state-supported institutions of higher education to the general assembly and the governor. In making its recommendations, the commission shall consider each governing board's and each institution's level of achievement of the statewide expectations and goals specified in section 23-1-104, as measured by data collected through the quality indicator system established in section 23-13-105.

**TOPIC: DISCUSSION OF THE FITZSIMONS RESEARCH COMPLEX,
EDUCATION SPACE**

PREPARED BY: JOAN JOHNSON AND JEANNE ADKINS

I. SUMMARY

The Commission is being asked to review a request from the University of Colorado Health Sciences Center (UCHSC) to approve an appropriation of \$6.85 million from the Trust Fund for the Fitzsimons Research Complex, Education Space. This request is pending in a not-yet-introduced supplemental bill on capital construction. This project and the money involved have a tortuous five-year history. that resembles an Iranian puzzle ring – an intricately carved ring of many circles that fit tightly together – until you drop it. It has usually stumped most people who try to put the pieces back together.

II. BACKGROUND

A \$3 million appropriation was included in the 1999 Long Bill for the Center for Clinical Performance at Fitzsimons, subsequently eliminated as a stand-alone project. The appropriation, however, remained in the Trust Fund for future expenditure at Fitzsimons. In August of that year, a few months after the Long Bill went into effect, both CCHE and the UCHSC agreed that the Ed I and Ed II programs at Fitzsimons should be combined. The new project was designated as the Fitzsimons Education Complex. The \$3 million was to be used to design both the education space in the first research building and the second complete education facility – a total of 104,905 gross square feet (gsf). The Center for Clinical Performance was no longer in the picture.

The education space within the research facility was to incorporate 21,960 gsf with 14,278 assignable square feet (asf) of finished space. The square footage of the project then and now remain unchanged. Allocation of the space includes: 12 multi-purpose labs, a molecular modeling lab, four small group learning rooms, a 100-seat lecture hall, 1,870 asf of support space and 640 asf of student community space.

Also in 1999, the General Assembly passed SB 99-236, which appropriated \$216 million in cash funds for the construction of Research I at the Fitzsimons campus. The program plan for the research facility was approved by the Director of Policy and Planning under the CCHE delegated approval process. The institution understood with that approval that it could design the interior education space, but that the Commission would not refer the approval of the state funds for that portion of the project pending resolution of management issues. The cash funds for this and other research facilities come from indirect cost recoveries, foundation resources, federal monies and proceeds from bonds issued by the system.

In January 2000 the HSC submitted a program plan for the Education Facility at Fitzsimons to CCHE for review and approval. Although it would take another year for CCHE to conditionally approve the program plan during which the Urban Land Institute project review was undertaken and completed, CCHE did recommend that the General Assembly use the previously appropriated \$3 million as the design money for both buildings. Pending resolution of these issues, the Legislature left this money in the Fitzsimons Trust Fund and appropriated an additional \$4.1 million of Trust Fund money to be used for the construction and finish of the education space in the research building at HSC's request. The Commission has only conditionally approved this project. With resolution of the management issue, the institution is asking the Commission to revisit the decision and submitted a fourth amended program plan.

Since the amount of professional design services relating to just the research zone education space was approximately \$464,000, the estimated total cost for the research facility education space in 2000 was \$4.5 million. The UCHSC designed the educational space within the research facility as it moved forward on this project and told staff it would delay finishing the education space until the management issues were resolved. Thus, the Research I complex would consist of the \$216 million in cash-funded space and the \$4.5 million for design and finish of the state-supported education space within the building.

In January 2001 the Commission conditionally approved the program plan for the combined Education facilities, pending passage of legislation creating a permanent oversight structure for the project and a joint agreement between the HSC and CCHE on the appointment of an individual to oversee the project. (See related historical review.)

The 2001 Long Bill carries a footnote requiring the above to occur prior to release of any funds for either the Education facility or the infrastructure.

In October 2001 the special session of the Legislature cut millions of dollars out of capital construction projects, including the pending Fitzsimons projects.

On Feb. 5, 2002, however, the Joint Budget Committee voted 6-0 to include \$6,850,351 in the yet-to-be introduced capital construction supplemental bill for the Fitzsimons Research Complex. The money would come from the Fitzsimons Trust Fund which, when originally appropriated, came from state capital construction funds. When spent, it is considered cash funds under TABOR, however, these funds are not institutional cash funds. The same footnote detailed above also applies to these funds.

Below is a comparison of the proposed expenditures for this project:

Total Project Cost:	<u>2000</u> \$4.5 million	<u>2002</u> \$6.85 million
Inflation		\$ 294,391
Incorporation of space for research zone Within the research building; having actual Construction cost data available		\$1,489,438
Increase in equipment costs		\$ 520,915

The institution submitted a financial table to CCHE on Monday that indicates its professional design services on the project exceeded its original estimates by \$99,387 – 21.41%.

Its construction costs for the space – square footage unchanged – exceeded its original estimate by 45.80% in an 18-month period; its initial equipment costs for the space were estimated at \$590,333 more than doubled to \$1,149,481 – an increase of 94.72%. Finally, the institution has submitted a miscellaneous cost increase of \$164,570 – increasing that expenditure by 54.29%.

However, UCHSC did not in its submission explain any of the stated cost increases other than that it applied a 6.48% inflation factor to all elements of the project. This significantly exceeds both the OSPB and JBC inflation rates on projects allowed for the project year. The inflation difference accounts for \$294,391 of the additional budget for the finished space. That leaves \$2,010,353 unexplained by the documentation provided staff this week.

III. STAFF RECOMMENDATION

That the Commission recommend to both the Capital Development Committee and the JBC that \$4.5 million be appropriated for this project. Of the \$3 million designated for design of both buildings, only \$464,000 was used for this facility. That leaves \$2,536,000 in the Trust Fund for the design of Ed II (now Ed IB). We understand that the UCHSC has a request for \$2.4 million in cash funds for design of the Ed IB building in front of the CDC. Consistent with our previous recommendation on the use of funds for design of these buildings, we believe there is enough money from the original \$3 million appropriation for design to take care of this request. We look forward to reviewing this request in the near future.

Inflation should not be an issue on this project since the research building itself is well under construction and the state funds from the Trust Fund are to finish off space within that facility. Inflation is generally not applied in these circumstances under the Office of

State Planning and Budgeting and CCHE budget guidelines. Should the Commission wish to apply the inflation factor, it should be applied according to the OSPB figure only and applied only to construction as fiscal rules dictate and not to the professional services, which have already been paid for by the institution, the equipment line nor the miscellaneous line.

State funds cannot be used for research space The institution's financial plan recognizes that the state funds are not appropriated for research space and anticipates costs to the state only for educational space needs at Fitzsimmons. The increase requested in equipment is not justified in the documents submitted. No additional equipment list is provided and no additional labs are included from staff review of the four different project plans.

Lacking documentation on the increased costs submitted by UCHSC, staff recommends the Commission approve the cost allocation for the project in the initial budget submission, all of which were verified in a third-party review, and subsequent submissions for this space and incorporate the design costs for this portion of the total building's design. If the Commission chooses to apply an inflation factor, the inflation should be applied as per OSPB/JBC budget instructions to the construction line only and recalculated at the authorized inflation amount.

[Attachment](#): Historical Review of Fitzsimmons

HISTORICAL REVIEW OF URBAN LAND INSTITUTE REVIEW OF FITZSIMONS/UNIVERSITY OF COLORADO HOSPITAL PROJECT, CAPITAL CONSTRUCTION DECISIONS

I. SUMMARY

On January 9, 2001, the Commission voted at its meeting to conditionally approve the program plans for the combined Education I and II facilities at the Fitzsimons site for the University of Colorado Health Sciences Center (UCHSC) as well as the infrastructure phase pending action. Conditions included adoption of legislation that outlined a permanent oversight structure for the project as well as joint agreement on appointment of an individual to oversee the project with sufficient development and large project experience to satisfy both parties.

The Urban Land Institute (ULI) in December 2000 had completed its assessment of the proposed University of Colorado Hospital move to the old Fitzsimons Army Medical Center. A summary of the recommendations regarding all questions addressed to the panel in the Colorado Commission on Higher Education and University of Colorado System review was submitted to Commission members. At the time of the ULI review, three projects, the two cited earlier and approval of the annual \$7.8 million payment to the statutory Trust Fund for the project, were pending before the Commission.

Legislation, although drafted and reviewed by both parties, stalled. University officials objected to the language being formalized in statute. The Capital Assets Subcommittee readdressed the earlier motion to formalize the agreement in statute and agreed instead to require a mutual agreement on the oversight structure involving the Regents and the Commission members long-term with both parties agreeing on the appointment of the individual who would steer the project. This new language was formalized in the legislative Long Bill for the current fiscal year in a footnote requiring that to occur prior to release of any funding for either the Education facility or the infrastructure.

II. BACKGROUND

In May 1999, the Commission entered into an agreement with ULI, the University of Colorado System, and the University of Colorado Health Sciences Center (UCHSC) to request an in-depth review of the proposed move of the UCHSC facilities from the 9th Avenue Campus to the site of the former Fitzsimons Army Medical Center.

Pending the review, the Commission had put decisions on hold to forward the \$943,000 request for infrastructure, and release of allocated but not released funding for the Education Building and its second year funding request. The Commission also put on hold a recommendation to fund the annual payment to the statutorily created Fitzsimons Trust Fund.

The ULI panel recommended that the state and the institution would realize significant savings by accelerating, wherever possible, the timetable for the project. Increased construction costs and uncertain economic conditions can add to the ultimate project cost increasing the potential debt for the institution. Although the panel raised some concern about the overall debt ratio for the UCHSC for the life of the project, it urged that the project proceed as quickly as funds allow anticipating that debt ratios would remain as projected and cost estimates would prove valid for the long-term. Some financial assumptions outlined in the ULI study should be reviewed by the Commission given the state's changed economic circumstance and capital project delays.

An over-arching recommendation from the panel, however, was that oversight of the project was insufficient for the scope of the construction and magnitude of the investment. The panel recommended that the legislature create a three-person oversight panel with significant responsibility and an independent director who reports to the panel. That individual would have a small staff and be responsible for construction management and fiscal oversight of the project.

This recommendation addressed the most critical issue raised by Commission members concerning the project. Lack of an external review process through the life of the project is crucial since the project spans 12 years in its major development stage (1998-2010) and potentially another eight to 10 years. Coordination of the project crossing multiple legislative sessions and gubernatorial transitions raised continuity issues for the panel. Affiliate (Children's Hospital, University Hospital and the Veterans Administration Hospital) moves and decisions are also involved.

Staff recommended the following actions, which were approved at the January 2001 meeting:

1. To submit a reprioritized list to the Office of State Planning and Budgeting, the legislative Capital Development Committee and the Joint Budget Committee moving the Trust Fund contribution, the infrastructure project and the top of the continuation project funding list.
2. To appropriate the first-year's funding for the Education facility made to the Trust Fund in the FY00-01 Long Bill to the institution and that the second-year funding for the project be placed at the top of the continuation project second-phase grouping of projects.

The effect of this recommendation was to ensure the projects received continuation funding. (This, however, did not occur because the agreement was not finalized. By the time the special session occurred and it was evident state revenues had dropped drastically, the project's second phase funding was changed. The original Trust Fund allocation, however, remained.)

Commission members unfamiliar with the ULI recommendations may review them by going to the CCHE website for January 2001 and reviewing attachment A of the agenda item concerning the ULI study.

**TOPIC: COLORADO STATE UNIVERSITY (CSU) CENTER FOR
THE ARTS CAPITAL CONSTRUCTION PROJECT AND
DECISION ON FURTHER PHASING OF THE PROJECT**

PREPARED BY: JOAN JOHNSON

I. SUMMARY

This item will be mailed under separate cover.

TOPIC: DISCUSSION AND DECISION ON A NEW COLORADO SCHOOL OF MINES CAPITAL CONSTRUCTION PROJECT

PREPARED BY: JOAN JOHNSON AND GAIL HOFFMAN

I. SUMMARY

Commission approval is requested of a new capital construction project for Colorado School of Mines. The construction project is for a 19,758-gross-square-foot, \$6,677,443 computer center addition to east side of the Center for Technology and Learning Media (CTLM). Construction of the addition would enable Mines to move the Computing and Networking Center from the second, or top, floor of the Green Center. That relocation will enable Mines to begin to address the serious roof and asbestos abatement problems at the 30-year-old Green Center. If the computer center proposal were funded, Mines would withdraw its previously approved amended program plan for the \$6,398,740 Green Center Basement Renovation and submit a comprehensive plan for renovation of Green Center in 2003. The Board of Trustees of the Colorado School of Mines is expected to act on this program plan at its March 8 meeting.

II. BACKGROUND

The Colorado School of Mines has been pursuing a two-pronged approach to renovating the Green Center. It received \$48,620 in controlled maintenance funding for FY 01-02 to assess the roof and asbestos abatement problems at the Green Center. The assessment study, completed in September 2001, recommended complete demolition of the second floor, where the computer center is located, to enable workers to remove the asbestos-containing material in the sprayed-on textured ceiling before the roof is replaced. A roofing consultant found the roof at the end of its useful life. Testing of the roof found moisture saturation in several places, including above the computer center. No money was appropriated for FY 02-03 for the roof and asbestos abatement problems due to the lack of time to verify the findings of the study. In the previous funding cycle, Mines received approval for spending \$6,398,741 of capital construction funds exempt for renovation of the Green Center basement. The basement renovation would primarily benefit Geophysics. The basement renovation project, originally in the Long Bill for FY 01-02 for possible funding in March 2002, was among the higher education capital construction projects deleted from the Long Bill for FY 01-02 spending in SB 01S2-023, passed in October 2001 as a result of declining state revenues. The program plan for the computer center addition was submitted to CCHE staff on Tuesday, Feb. 26, 2002.

The Proposal

The Colorado School of Mines is proposing relocating the computer center in an addition built for it. All campus data and phone services, including the critical 911 for emergencies, emanate from the second story of the Green Center. Relocation of the computer center to a permanent location would avoid the possibility of having critical computer services disrupted either by roof leakage or asbestos contamination, as well as enable work to go forward on addressing the roof and asbestos abatement once the renovation of Green Center is thoroughly addressed in a program plan that will be submitted to CCHE in 2003.

The center would be relocated to an addition of 19,758 gross square feet (12,843 assignable square feet versus the 10,938 assignable square feet presently available). The computer center addition, planned for either two or three stories connected to the CTML, would require:

- Open computer labs, offices, kitchen, and storage, as does the Computing and Networking Center.
- Computer work rooms for staff, small- and large-group study areas, and a vending lounge, features that the current computer center does not have.
- \$550,000 to move the campus fiber, fiber/copper, and copper backbone, and the equipment and circuits from Green Center to the addition. The utility tunnel that serves the Green Center was extended to the CTML building earlier.
- Renovation of 1,800 gross square feet of the basement of the CTML for a computer machine room, where the network servers for the campus data system, the main campus telephone switch, and all associated equipment and cabling would be located. The basement has the advantage of being adjacent to the utility tunnel system and being a secure environment without windows. The basement portion of the addition would have computer classrooms with windows because the site slopes toward Arapahoe Street.
- An elevator for handicapped and service access. Placement of the elevator awaits further design studies.

III. STAFF ANALYSIS

CCHE staff completed a Program Plan Evaluation FY 2002-03 for the Colorado School of Mines Green Center – Decontamination and Repair Project – Phase One Computer Center Addition to Center for Technology and Learning Media. The addition for the computer center is justified from a health and safety standpoint to avoid disruptions caused either by asbestos contamination or roof leakage to the critical services the computer center provides all academic and residential buildings on campus. It is also justified as the first step toward addressing the roof and asbestos abatement problems of the Green Center. If the computer center were to be moved to some temporary location while the work went forward in the Green Center, the state would have to pay the \$550,000 cost of relocating the campus

information technology backbone and equipment twice. A permanent addition for the computer center would better serve the needs of the campus.

The primary policy issue the addition poses is that it would require the expenditure of capital construction dollars without an updated facility master plan. CCHE last approved a facility master plan for the Colorado School of Mines in 1985, nearly 17 years ago. The Commission has directed that no capital construction projects should go forward until updated master plans have either been submitted or approved, and staff recommended denial of the program plan for the Colorado School of Mines Wellness Center program plan for FY 02-03 because of the lack of a master plan. The Commission may waive the updated master plan requirement in this instance in order to expedite the resolution of the many physical deficiencies of the Green Center. But the need for an updated facility master plan for Mines still exists.

IV. STAFF RECOMMENDATION

That the Commission approve the program plan for the Colorado School of Mines Green Center – Decontamination and Repair Project – Phase One Computer Center Addition to Center for Technology and Learning Media with these two conditions:

- 1. That if this project is funded, the Colorado School of Mines will withdraw its amended program plan for the Green Center Basement Renovation; and**
- 2. That CCHE will not approve any future Colorado School of Mines new construction projects requiring capital construction dollars until an updated facility master plan is submitted to CCHE.**

Appendix A

STATUTORY AUTHORITY

C.R.S. 23-1-106 Duties and powers of the commission with respect to capital construction and long-range planning.

(3) The commission shall review and approve master planning and program planning for all capital construction projects of institutions of higher education on state-owned or state-controlled land, regardless of the source of funds, and no capital construction project shall commence except in accordance with an approved master plan, program plan, and physical plan.

(5) The commission shall approve plans for any capital construction project at any institution, including a community college, regardless of the source of funds; except that the commission need not approve plans for any capital construction project at a local district community college or area vocational school. The commission may except from the requirements for program and physical planning any project which will require less than five hundred thousand dollars of state moneys.

MEMORANDUM

TO: CCHE Commissioners

FROM: James Jacobs, Director of Finance

RE: Fort Lewis Hesperus Account

DATE: February 28, 2002

Summary. Fort Lewis College seeks spending authorization of \$27,000 per year to increase academic counseling to Native American students. The funds will come out of the Hesperus Account – an account statutorily established to receive funds for leases on the Hesperus property. The proceeds of this fund are to be used first for tuition waivers for Native American students and subsequently for other uses as determined by the State Board of Agriculture. The following was submitted by Fort Lewis College:

Background. Fort Lewis College provides a liberal arts education to Colorado residents as well as students from outside of Colorado. An integral component of the college's charge is to educate Native American students who according to a treaty with the federal government and state statute, are to be admitted tuition free. However, Fort Lewis College is concerned about the academic preparation of many Native American students, and proposes the use of funds from the Hesperus Account to attempt to address this.

Problem definition. Enrollment of Native American students at Fort Lewis College has more than doubled in the past twelve years, from 340 in fall 1998 to 704 in fall 2001. The proportion of Native American students at the college has increased from nine percent to sixteen percent during this time period. Over 100 tribes are represented on campus. Many students who are admitted are under prepared for the FLC experience during the first year, even though they meet admission standards. The minimum admissions Index Score for standard admissions is 80. The average Index Score for White/Non-Hispanic freshmen in Fall 2001 was 92, whereas the average Index Score for Native American freshmen was 87. The average ACT composite score for White/Non-Hispanic freshmen was 20.5 compared to 17.8 for Native American freshmen. High school records show that the average Grade Point Average was the same for these two groups (2.9). The Native American students' average high school percentile rank was 61, compared to an average rank of 48 for the White/Non-Hispanic students, however.

Academic standings at the end of fall 2001 indicate that 30 percent of Native American students were in academic trouble as compared to 14 percent of White/Non-Hispanic students. Among first-time freshmen, the Native American percentage in trouble was 44 percent, while 26 percent of White/Non-Hispanic students were in that category. "Academic trouble" is defined as dismissal, warning, probation or suspension. Twenty-one percent of Native American first-time freshmen (44 of 207) were suspended at the end of their first term compared to 7 percent of White/Non-Hispanic first-time freshmen (54 of 738).

First term GPA is the strongest predictor of retention and graduation once the student is enrolled.

One-year retention among White/Non-Hispanic freshmen entering in 1999 was 57 percent compared to 51 percent for Native American freshmen. Among window students however, retention was 60 percent for White/Non-Hispanic students compared to 32 percent for Native American students. The six-year graduation rate for Native American students was only 18 percent, compared to 32 percent overall, and 39 percent among Hispanic students (Fall 1994 cohort). Fort Lewis College fell short of the retention and graduation Quality Indicator benchmarks again this year for all students, including minority students.

The institutionally supported Native American Center helps students deal with many of the cultural and social barriers encountered. Grant programs with specific eligibility criteria provide some academic support to the small proportion of eligible students. The federally funded TRIO program and the Colorado Alliance for Minority Participation (CO-AMP) served only 31 of the 202 new Native American freshmen last fall (15%). Program eligibility requirements are too narrow to serve many of the students who need the academic support services. The poor academic outcomes among Native American students are related to under-preparedness and cultural barriers. It will continue to be difficult for academic programs to meet the needs of these students unless specific academic support services can better overcome barriers to success.

Source of Funding: Hesperus Account. The decision item proposes to use funds from the Hesperus Account, established as per Section 23-30-114, C.R.S. Monies are deposited into this fund from leases on the Hesperus property. The statute provides that these monies shall be used first for tuition waivers for Native American students, and the use of any remaining monies can be determined by the State Board of Agriculture. As the Native American tuition waivers have been funded with general fund, as per Section 23-52-105, C.R.S., we request the use of a portion of funds from the Hesperus Account for the supplemental instruction as well as the Native American Student Center.

Supplemental Instruction

A student's first year curriculum, and academic success in subsequent years, can be enhanced through customized supplemental instruction (SI). Academic support needs to occur as students enroll in courses that historically have high failure rates. Most often, these courses involve quantitative and technical content within a specific academic area. Supplemental instruction services will first be developed for those courses with the highest non-success rates for Native American freshmen. For example, in Fall 2001 only 31% of Native American freshmen completed College Algebra with a grade of C- or better, only 37% succeeded in Biology 112, and less than half successfully completed Engineering 101.

The goal of supplemental instruction is to provide academic assistance to students in specific courses. This approach is different from a traditional one in which study skills are taught in isolation from content material. By presenting academic skills with class material, supplemental instruction facilitators have been able to increase retention, particularly among first-generation and economically disadvantaged students¹. Since courses, not students, are targeted in an SI approach, students feel that no remedial stigma is attached to participation².

¹Arendale, D. (1996). Increasing the Efficiency and Effectiveness of Learning for First Year College Students through Supplemental Instruction. Columbia, SC: the National Association for Developmental Education.

²Bidgood, P. (1994). The Success of Supplemental Instruction: Statistical Evidence. Birmingham, England: Education Development Association.

Supplemental instruction curricula will be developed for targeted courses with low success rates. Faculty, staff and student workers will work directly with Native American students who need academic support. The program will increase faculty members' knowledge and understanding of Native American students' foundational knowledge, work with assumptions of what students know and how they think through problems, and communicate specific impediments to learning among Native American students. Staff will work with faculty in curricular modification to reduce cultural gaps and biases, as well as develop culturally appropriate SI materials for the targeted courses.

Monitoring of student progress, such as tracking attendance, grades, and tutoring participation, will be an important component of the program. For example, classes missed as a result of cultural obligation, and making up the associated missed work can be a problem for some Native American students. The coordinator will work with the instructor and student in cases where traditional ceremonies require the student to miss class. Plans for make-up work will be developed in advance. The program will help improve cultural understanding among faculty, and help students balance academic and family responsibilities. A tracking system will be developed and implemented not only to monitor student progress, but also to assess program effectiveness.

The Supplemental Instruction program will improve student academic achievement and retention, as well as graduation rates, leading to increased academic success. Program evaluation will include assessment of changes in success rates in targeted courses among participating students as well as GPA, retention, and graduation outcomes.

The Supplemental Instruction program will be an ongoing expenditure.

Resources Required

A Supplemental Instruction coordinator, a faculty director, and a team of peer tutors will be required. The SI coordinator will be responsible for providing outreach to instructors of those freshman courses with high student failure rates. Additionally, the SI coordinator will recruit peer tutor/mentors, work with faculty to develop supplemental curricula, and, upon the request of the course instructor, incorporate general study skills information with existing curricula. The coordinator will be responsible for monitoring and evaluating outcomes, in consultation with the college's Offices of Assessment and Institutional Research. This staff person will also work closely with staff from the Native American Center to address the instructional needs of students who study there, and will work in collaboration with both the TRIO Program for Academic Advancement and CO-AMP to coordinate academic support and ensure resources are not duplicated. The faculty director will oversee all aspects of the program, supervise the coordinator, and act as liaison with instructors and academic departments to ensure the soundness of the SI curriculum.

The program will hire student peer tutors/mentors to work with the students in need of academic support services. The upper-division Native American peer tutor/mentors will not only tutor the students in the Supplemental Instruction curriculum, but will also mentor young freshmen and establish connections with them. Each peer tutor will audit the course, and will facilitate Supplemental Instruction on a regular schedule for participating students.

The approach will include extensive outreach, both to faculty and students. For those sections of courses identified as high risk, the faculty director, the SI coordinator, course instructor, and peer

tutors will collaborate to develop and implement the supplemental curriculum that will be offered during the term, under the supervision of the faculty director.

Budget

The SI coordinator is budgeted at half time for nine months, with a base salary of \$25,000, for a total salary of \$12,500 and benefits of \$2,400. The total annual position cost, therefore, is \$14,900. The faculty director will be reassigned four credits per year with a replacement cost of \$4,000. It is expected that at least four peer tutor/mentors will be working an average of 25 hours per month at \$7.25 per hour during the nine-month academic year, for a total annual cost of about \$6,500. A supplies and materials budget of \$1,600 will help support the program. The total projected annual budget is \$27,000.

Native American Student Center

Description:

The funding request of \$64,000 as itemized below is to be used for minor repairs and renovations to the Native American Student Center. Increased usage of the Center has necessitated the upgrades, which will significantly enhance functionality. Native American students cite improvements to the kitchen area as one of their major concerns. The kitchen area is highly utilized, both for fundraising activities throughout the academic year (i.e., Indian Tacos sales) and as a gathering place.

The funding request of \$64,000 is one time and is to be used for minor repairs and renovations.

Budget required is as follows:

OPTION #1	\$64,000
Computers	\$ 4,000
Furnishings	5,000
Lighting Improvements	4,000
Window Blinds (Replace existing)	6,000
Kitchen Improvements	
Cabinets/Countertops	5,000
Sink/Plumbing	1,000
Refrigerator (Large)	1,000
Stove/Ventilation System	38,000

Alternative 1. Use state general fund. While this would be most desirable, we understand the realities of the state's fiscal constraints.

Alternative 2. Reallocate. This strategy has been and continues to be used. For example, operating dollars have been reallocated each of the past three years to fund salary increases and the costs associated with bringing new buildings on line. The college has gone through a similar process in preparing for the FY 2002-03 budget cycle. At present, it is not feasible to allocate scarce new dollars to the Native American Supplemental Instruction program.

Alternative 3. Use other funds. We propose to use a portion of the fund balance of the Hesperus Account for this purpose.

We can track the retention and graduation rates over time to see if this strategy is successful.

Any analysis will take place after the program has been implemented. After a number of years, Fort Lewis College can examine retention and graduation statistics for Native American students.

Recommendation

It is recommended that the General Assembly appropriate \$91,000 cash funds exempt to the State Board of Agriculture with the letternote:

"This amount shall be from the Hesperus Account; \$64,000 is appropriated for improvements to the Fort Lewis College Native American Center and \$27,000 is appropriated for academic support for Native American students".

CCHE Analysis

The last time the Hesperus Account fund had expenditures booked against it was in FY 1989 for \$85,707. The following table shows a history of revenue for the past five years:

		Restricted	Unrestricted
	Interest Income	Fund Balance	Fund Balance
1996-1997	\$23,113	\$116,649	\$278,956
1997-1998	25,844	116,649	304,899
1998-1999	25,761	116,649	330,561
1999-2000	27,684	116,649	358,245
2000-2001	29,883	116,649	388,128

Fort Lewis College has demonstrated the need to improve retention rates and to provide other academic counseling for Native American students. It would appear that the supplemental instruction program has been well developed in terms of expectations, goals and structure. The Hesperus Account has sufficient funds to operate this program. Interest income exceeds the initial \$27,000 annual costs.

Recommendation

That the Commission forward the Fort Lewis College request to the Joint Budget Committee to authorize the expenditure of \$27,000 annually from the Hesperus Account for academic support programs for Native American students. However, staff does not recommend inclusion of the renovation portion as we believe that it is an inappropriate use of the fund.

**TOPIC: ADOPTION OF CRITERIA FOR “STATE GUARANTEED”
GENERAL EDUCATION COURSES**

PREPARED BY: SHARON SAMSON/PATTY GETTLE

I. SUMMARY

This agenda item presents the critical first step in achieving the goals of the general education legislation – adoption by the Commission of the criteria for designating general education courses as “state guaranteed.” The process for developing the criteria was both collaborative and consultative, including the legislative sponsors, governing boards, institutions, faculty, and students. The Western Interstate Commission on Higher Education (WICHE) served as a strategic partner on this initiative, co-funding the GE-25 Council Roundtable and acting as facilitators in the policy discussions.

The two general education mandates that were adopted in the 2001 legislative session, HB-01-1263 and HB-01-1298, were based on the belief that general education courses are key to students’ academic success. The General Assembly charged the Colorado Commission on Higher Education with ensuring that the general education curriculum for all undergraduate degree programs provides the knowledge and skills that develop clear and effective communication, mathematics, and technology skills, and stimulate students’ critical thinking ability. While the bill titles referred to general education, the underlying purpose of the legislation was to ensure that general education credits apply to the graduation requirements at the transfer institution. The two bills are complimentary in nature in which HB 01-1263 defines a “student bill of rights,” and HB 01-1298, provides an infrastructure for implementing the “state guaranteed” core concept and communicating general education information to students. The core framework applies to all first-time students enrolling in higher education in 2003-04.

Under the concept developed by the GE-25 Council, CCHE is guaranteeing that certain courses that meet state criteria will apply to college graduation requirements ([Attachment A](#)). CCHE is not selecting 10 or 12 specific general education courses. Instead, the higher education community proposed to define the criteria that would qualify general education courses as “state guaranteed,” that is to apply to general education graduation requirements. Faculty working committees proposed criteria. The GE-25 Council reviewed the proposed criteria to ensure that the criteria were specific, clear, and feasible.

CCHE staff recommend that the Commission approve the Competency criteria recommended by the GE-25 Council in [Critical Thinking](#), [Mathematics](#), [Technology](#), and [Written Communication](#) (Attachment B). CCHE staff further recommend that the Commission approve the state goals, definition and criteria recommended by the GE-25 Council in [Arts and Humanities](#), [Communications](#), [Mathematics](#), [Natural and Physical Sciences](#), and [Social Sciences](#) (Attachment C).

Prior to March 31, 2002, the GE-25 Council will develop the core framework including making the final decision on the disciplines and maximum guaranteed credit hours.

II. BACKGROUND

The background section summarizes the mandates of HB 01-1263 and HB 01-1298 and the activity that has occurred to date to implement the legislation. The bill numbers are referenced in the parentheses().

2001 General Education Legislative Mandates

Commission shall:

- Adopt policies and practices as may be necessary for the implementation of general education and common course numbering (1298).
- Convene a council (1298); council goes into sunset review in 2011.
- Establish a standard of 120-hour baccalaureate degree (1263).
- Adopt policies to ensure transferability of courses (1263).
- Develop a plan to implement a core course concept that includes general education course guidelines for all public institutions (1263).
- Submit to Education Committees and JBC progress reports before March 31, 2002 (1298).
- Document students' success in transferring (1298).
- Design and implement a database to provisions of 1298.
- Solicit grants and private donations to implement the course-numbering project and invest in fund at state treasury. All state funds shall remain in the fund and shall not revert (1298).

Governing boards shall:

- Modify existing transfer policies as necessary (1298).

Institutions shall:

- Confirm their own general education core course requirements to the Commission's guidelines (1263).
- Identify the specific courses that meet the general education core course guidelines (1263).
- Review courses that correspond to Colorado's common course numbering system (1298).
- Publish and update a list of general education courses that correspond to the state's common course numbering system by fall 2003 (1298).
- Submit its general education courses, including course descriptions, for review and approval by the Commission on or before March 1, 2004 (1298).

Students will:

- Receive credit for courses that they test out of free of tuition (1263).

CCHE appointed the GE-25 Council in July 2001 to define guidelines for the core framework. The GE-25 Committee represents a broad cross-section of higher education, including the governing boards and individual institutions, college presidents, academic vice-presidents, faculty, and student representatives. CCHE notified all college presidents of the Students' Bill of Rights.

CCHE, in collaboration with the Western Interstate Commission on Higher Education (WICHE), received a small grant from the Ford Foundation to advance the general education initiative. In September, the GE-25 Council met to clarify the purpose of legislation and develop charges for the faculty working committees – i.e., develop the criteria for qualifying general education courses as state guaranteed transfer courses.

In October Representative King delivered the opening address at the statewide Faculty-to-Faculty Conference and answered questions regarding the legislative intent of the general education legislation. The faculty formed ten working committees with each institution represented on each committee – four competency committees, five content committees, and a separate engineering working committee. The faculty working committees submitted final recommendations in late January. On February 15, 2002, the GE-25 Council reviewed the recommendations and modified the criteria to ensure they were specific, clear, and feasible.

The GE-25 Council is continuing to work on the framework, specifically the disciplines, maximum credit hours guaranteed to transfer, and several competency issues as they relate to content criteria.

III. STAFF ANALYSIS

The GE-25 Council fully endorse the proposed Competency criteria, including Critical Thinking, Mathematics, Technology, and Written Communication (attached). The GE-25 Council endorse the state goals, definition, and criteria of the content areas – Arts and Humanities, Mathematics, Natural and Physical Science and Social Science (attached). The disciplines listed for each content area and the maximum number of guaranteed transfer credits are included for context. While the discipline identification and maximum credit hours are essential elements of the state framework, these decisions are not critical for the next step – selecting courses for state guaranteed designation.

To alleviate any misperceptions regarding the purpose of the state guaranteed core, the GE-25 Council compiled responses to the following list of frequently asked questions. The responses are provided as context for the broader Commission discussion.

DOES A COLLEGE NEED TO REDESIGN ITS GENERAL EDUCATION CURRICULUM TO MEET THE STATE GUIDELINES?

No. The state guaranteed core is designed to guarantee transfer content courses and provide assurance of the quality of the “state guaranteed” general education courses. The core courses are guaranteed to transfer and apply to the graduation requirements at all institutions and for all majors. Engineering has a modified guaranteed transfer framework, but it parallels the arts and sciences core framework. A college or university may choose to require more general education credits than the state guaranteed core, but it may not accept fewer.

The law limits the number of state guaranteed general education courses to 40 credit hours, recognizing that some institutions will have additional general education requirements. The governing board presidents believe that additional graduation requirements are the prerogative of the institution. The responsibility and authority for defining the full general education requirements, and the hallmark of an institution, remain with the institution. In the policy, the state guarantees the portability of a selected core.

However, it is expected that institutions will modify the course syllabi for any course seeking “state guaranteed” transfer designation to align with the criteria.

WHAT IS THE DIFFERENCE BETWEEN COMPETENCY AND CONTENT CRITERIA?

Competencies are the abilities and skills that students are expected to demonstrate when they have completed the general education curriculum requirements. The four competencies apply across the general education curriculum – and in fact differentiate a general education course from other courses within a discipline. The competency criteria are written from the student perspective.

Content criteria are course-specific. The content area criteria contain criteria that define the knowledge or scope of content and reference the specific competencies that the course is designed to develop and refine.

WILL INSTITUTIONS NEED TO CHECK THAT ALL STUDENTS TAKE COURSES IN COMMUNICATION, MATHEMATICS, SOCIAL SCIENCE, SCIENCE AND ARTS AND HUMANITIES?

Institutions will check that all transfer students have taken the “state guaranteed” courses in Communication, Mathematics, Social Sciences, Arts and Humanities, and Natural and Physical Science. They will apply those courses that have the state guaranteed designation toward graduation requirements, up to the maximum number of credits specified in the core guidelines. However, the state guaranteed core does not supplant the general education requirements at an institution. Native students will meet the graduation requirements as specified at their home institution.

WILL INSTITUTIONS NEED TO CHECK THAT ALL STUDENTS MEET THE FIVE COMPETENCIES SPECIFIED IN THE LAW?

Yes. The student bill of rights implies that students are guaranteed that general education will develop competency in critical thinking, reading, written communication, technology, and mathematics. It is expected that institutions will modify their own curriculum and practices to ensure the development and mastery of all five competencies.

WILL THE COMMUNITY COLLEGE TRANSFER CORE BECOME OBSOLETE WHEN THE NEW STATE GUARANTEED COURSES ARE APPROVED?

The community college guaranteed transfer core curriculum will continue, but the list of transferable courses and number of credits guaranteed to transfer in a particular content category may change to align with the state guaranteed criteria. This applies to all existing transfer agreements, including four-year agreements, which limit the number of transferable credits to a number below the state core.

Next steps

The institutions of higher education will “identify the specific courses that meet the general education course guidelines.” Following the Commission action, CCHE staff will present the criteria and the process for nominating general education courses for “state guaranteed” designation at the various campuses. The GE-25 Council will arrange the meetings. Faculty will begin the selection process, with the academic vice-president forwarding the course nominations to CCHE on or before November 1, 2002.

The content working committees will review the nominated courses to determine if the course is aligned with the general education criteria. The working committees will convene September 1, October 1, and November 1 to review the nominated courses. The process is not automatic. It is expected that institutions will offer a broader selection of general education courses than those they nominated for state guaranteed designation. This follows the highest common denominator approach advocated by the college presidents.

The “state guaranteed” course review process will conclude November 2002. In compliance with statute, the institutions will publish the general education courses designated as qualifying for statewide transfer in their 2003-04 college catalogs. These catalogs go to the printer in February 2003. Following the course identification process, CCHE will implement a process to test out of general education courses, effective fall 2003.

IV. STAFF RECOMMENDATION

That the Commission approve the competency criteria recommended by the GE-25 Council in:

**Critical Thinking
Mathematics
Technology, and
Written Communication.**

That the Commission approve the state goal, definition, and criteria recommended by the GE-25 Council for each of the following:

**Arts and Humanities
Communication
Mathematics
Natural and Physical Sciences
Social Sciences.**

Appendix A

STATUTORY AUTHORITY

23-1-125. Commission directive - student bill of rights - degree requirements - implementation of core courses - on-line catalogue - competency test.

(3) **Core Courses.** THE COMMISSION, IN CONSULTATION WITH EACH COLORADO PUBLIC INSTITUTION OF HIGHER EDUCATION, IS DIRECTED TO OUTLINE A PLAN TO IMPLEMENT A CORE COURSE CONCEPT, WHICH DEFINES THE GENERAL EDUCATION COURSE GUIDELINES FOR ALL PUBLIC INSTITUTIONS OF HIGHER EDUCATION. THE CORE OF COURSES SHALL BE DESIGNED TO ENSURE THAT STUDENTS DEMONSTRATE COMPETENCY IN READING, CRITICAL THINKING, WRITTEN COMMUNICATION, MATHEMATICS, AND TECHNOLOGY. THE CORE OF COURSES SHALL CONSIST OF AT LEAST THIRTY CREDIT HOURS, BUT SHALL NOT EXCEED FORTY CREDIT HOURS. INDIVIDUAL INSTITUTIONS OF HIGHER EDUCATION SHALL CONFORM THEIR OWN CORE COURSE REQUIREMENTS WITH THE GUIDELINES DEVELOPED BY THE COMMISSION AND SHALL IDENTIFY THE SPECIFIC COURSES THAT MEET THE GENERAL EDUCATION COURSE GUIDELINES.....

23-1-108.5. Duties And Powers Of The Commission With Regard To Common Course Numbering System - Repeal. (1) THE GENERAL ASSEMBLY HEREBY FINDS THAT, FOR MANY STUDENTS, THE ABILITY TO TRANSFER AMONG ALL STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION IS CRITICAL TO THEIR SUCCESS IN ACHIEVING A DEGREE. THE GENERAL ASSEMBLY FURTHER FINDS THAT IT IS NECESSARY FOR THE STATE TO HAVE SOUND TRANSFER POLICIES THAT PROVIDE THE BROADEST AND SIMPLEST MECHANISMS FEASIBLE, WHILE PROTECTING THE ACADEMIC QUALITY OF THE INSTITUTIONS OF HIGHER EDUCATION AND THEIR UNDERGRADUATE DEGREE PROGRAMS. THE GENERAL ASSEMBLY FINDS, THEREFORE, THAT IT IS IN THE BEST INTERESTS OF THE STATE FOR THE COMMISSION TO OVERSEE THE ADOPTION OF A STATEWIDE ARTICULATION MATRIX SYSTEM OF COURSE NUMBERING FOR GENERAL EDUCATION COURSES THAT INCLUDES ALL STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION AND THAT WILL ENSURE THAT THE QUALITY OF AND REQUIREMENTS THAT PERTAIN TO GENERAL EDUCATION COURSES ARE COMPARABLE AND TRANSFERABLE SYSTEMWIDE.

GE-25 Council – General Education Coordinating Council

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Russ DeVriendt (Aims)		
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CONTENT AREA: ARTS & HUMANITIES
General Education
“Guaranteed Transfer” Course Criteria

State-level Goal:

Collectively, the general education requirement in art and humanities is designed to help students:

- recognize the different ways in which humans have perceived their world.
- deepen their understanding of how social, cultural, linguistic, religious, philosophical, and historical circumstances shape the human environment.
- enhance their appreciation of the creative world.
- explore fundamental questions of value, meaning, and modes of expression and creativity.
- investigate the cultural character and literatures of the human experience.
- learn to approach problems with greater awareness of their moral dimensions and ethical consequences.

Disciplines Included:

Humanities; Foreign Languages; Literature; Philosophy; Cultural and Area Studies; or non-studio Theatre, Art and Music classes.

Criteria for Designating a Humanities Course as State Guaranteed:

The content of a “state guaranteed” humanities course shall be designed to provide students experiences either to:

1. Respond analytically and critically to cultural artifacts, including literature, music, and works of art by:
 - a. Describing the basic elements and their effects on meaning in a work of art.
 - b. Relating the effects of geography, economics, politics, religion, philosophy and science on the values of a culture and the stylistic features of its arts.
 - c. Determining how a work reflects or rejects the major values or concerns of a historical era or culture.
 - d. Interpreting themes or major concepts.

OR

2. Compare and contrast attitudes and values of specific eras of the past to the present, or non-European cultures to those of Western cultures, or high to popular cultures.

OR

3. Understand ways of thinking, including logic and ethics, or obtain a broad understanding of the different questions dealt with by leading philosophers and their positions on those questions.

AND

4. Competency in critical thinking.
5. Competency in written communication.
6. Develop competency in technology.

Maximum number of Arts & Humanities course credits that will be guaranteed to transfer
9 credit hours, with at least two courses addressing different content criteria

CONTENT: COMMUNICATION
General Education
“Guaranteed Transfer” Course Criteria

State-level Goal:

The general education requirement in communication is designed to help students:

- To develop the ability to use the English language effectively.
- To read and listen critically.
- To write and speak with thoughtfulness, clarity, coherence, and persuasiveness.

Disciplines Included:

Writing or English writing courses

Criteria for Designating a Communications Course as State Guaranteed:

The **content** of a “state guaranteed” communication course shall be designed to:

1. Develop knowledge of genre conventions ranging from structure and paragraphing to tone and mechanics.
2. Develop knowledge of standard English syntax, grammar, punctuation, and spelling.
3. Develop understanding of how to use voice, tone, format and structure appropriately.
4. Develop flexible strategies for generating, revising, editing, and proofreading.
5. Demonstrate student’s ability to analyze, synthesize and evaluate messages through critical reading, active listening and observing.
6. Demonstrate student’s comprehension of **content** through effective communication strategies, including:
 - a) Ability to compose messages for specific purposes (e.g., expository, persuasive, technical, etc.).
 - b) Ability to communicate to a variety of audiences.
 - c) Ability to adapt content and style to respond to the needs of different audiences and different rhetorical situations.

AND

7. Competency in critical thinking.
8. Competency in written communication.

Maximum number of credits in communications courses that will be guaranteed to transfer

6 credit hours in writing courses

COMPETENCY: CRITICAL THINKING
General Education

Guiding Principle:

The goal of instruction in “critical thinking” is to help students become capable of critical and open-minded questioning and reasoning. An understanding of argument is central to critical thinking.

Definition:

Ability to examine issues and ideas and to identify good and bad reasoning in a variety of fields with differing assumptions, contents and methods

Criteria:

1. Information Acquisition
 - Identify questions, problems, and arguments.
 - Differentiate questions, problems, and arguments.
2. Application
 - Evaluate the appropriateness of various methods of reasoning and verification.
 - State position or hypothesis, give reasons to support it and state its limitations.
3. Analysis
 - Identify stated and unstated assumptions.
 - Assess stated and unstated assumptions.
 - Critically compare different points of view.
4. Synthesis
 - Formulate questions and problems.
 - Construct and develop cogent arguments.
 - Articulate reasoned judgments.
5. Communication
 - Discuss alternative points of view.
 - Defend or refute a point of view and justify by citing evidence.
6. Evaluation
 - Evaluate the quality of evidence and reasoning.
 - Draw an appropriate conclusion.

COMPETENCY: MATHEMATICS

General Education

(Defines criteria for mathematics competency across the curriculum. See mathematics content for course-specific criteria.)

Definition:

Ability to use mathematical tools and strategies to investigate and solve real problems.

Criteria

- 1. Information Acquisition:**
 - Select data that are relevant to solving a problem.
- 2. Application**
 - Use several methods, such as algebraic, geometric and statistical reasoning to solve problems.
- 3. Analysis**
 - Interpret and draw inferences from mathematical models such as formulas, graphs, and tables.
- 4. Synthesis**
 - Generalize from specific patterns and phenomena to more abstract principles and to proceed from abstract principles to specific applications.
- 5. Communication**
 - Represent mathematical information symbolically, graphically, numerically and verbally
- 6. Evaluation**
 - Estimate and verify answers to mathematical problems to determine reasonableness, compare alternatives, and select optimal results.
 - Recognize that mathematical and statistical methods have limitations.

CONTENT: MATHEMATICS
General Education
“Guaranteed Transfer” Course Criteria

State-level Goal:

Collectively, the general education requirement in mathematics is designed to help students:

- develop understanding of fundamental mathematical concepts and their applications.
- develop a level of quantitative literacy that would enable them to make decisions and solve problems and which could serve as a basis for continued learning.

Disciplines Included:

Mathematics

Examples of prototypical Mathematics General Education courses:

College Algebra; Mathematics for Elementary Educators; Mathematics for Secondary Educators; Calculus I, II or III; Liberal Arts Mathematics; Finite Mathematics/Business Mathematics/Financial Mathematics; Survey of Calculus; Trigonometry/Pre-Calculus; Statistics (with an introduction to Probability); any course that has one of these courses as a pre-requisite would also meet these criteria.

Criteria for Designating a Mathematics Course as State Guaranteed:

1. The **content** of a “state guaranteed” mathematics course shall be designed to provide students experience to know how to:
 - a) Interpret and draw inferences from mathematical models such as formulas, graphs, and tables.
 - b) Represent mathematical information symbolically, visually, numerically, and verbally.
 - c) Use several methods, such as algebraic, geometric, and statistical reasoning, to solve problems.
 - d) Estimate and verify answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results.
 - e) Demonstrate an ability to generalize from specific patterns of events and phenomena to more abstract principles, and to proceed from abstract principles to specific applications.
 - f) Recognize that mathematical and statistical methods have limitations.

AND

2. Competency in Mathematics
3. Competency in Critical Thinking

Maximum number of credits in mathematics that will be guaranteed to transfer

1 course, ranging from 3-5 credits. Test is that the course must meet all the stated criteria.

CONTENT: NATURAL/PHYSICAL SCIENCES

General Education

“Guaranteed Transfer” Course Criteria

State-level Goal:

Collectively, the general education requirement in natural and physical sciences is designed to help students master scientific **knowledge** at a level that facilitates communication in an increasingly technological society, including:

- to instill a clear understanding of the basic scientific viewpoint
- to enable students to learn and use the scientific method
- to evaluate the impacts of science and technology on society
- to increase the level of science literacy

Disciplines Included:

Astronomy, Biology, Chemistry, Environmental Science, Geology, Physics

Criteria for Designating a Science Course as State Guaranteed:

1. The content of a “state guaranteed” science course shall be designed to develop students’:
 - a) foundational knowledge in specific field(s) of science.
 - b) understanding of and ability to use the scientific method.
 - c) recognition that science as a process involves the interplay of observation, experimentation and theory.
 - d) use of quantitative approaches to study natural phenomena.
 - e) ability to identify and highlight interconnections between specific course being taught and larger areas of scientific endeavor.
 - f) ability to distinguish among scientific, nonscientific, and pseudoscientific presentations, arguments and conclusions.
2. The required laboratory component of a science course will:
 - a) develop concepts of accuracy, precision, and the role of repeatability in acquisition of scientific knowledge.
 - b) be predominately hands-on and inquiry-based with demonstration components playing a secondary role.
 - c) emphasize a student’s formulation and testing of hypotheses with scientific rigor.
 - d) stress student generation and analysis of actual data, the use of abstract reasoning to interpret these data, and communication of the results of experimentation.
 - e) develop modern laboratory skills.
 - f) emphasize procedures for laboratory safety.

AND

3. Competency in mathematics
4. Competency in critical thinking
5. Integrate oral and/or written communication competency skills.

Maximum number of science credits that are guaranteed to transfer

Two lab-based courses (8 credits)

CONTENT: SOCIAL SCIENCES
General Education
“Guaranteed Transfer” Course Criteria

State-level Goal:

Collectively, the general education requirements in social sciences are designed to help students acquire a broad foundation in social science knowledge and ability to apply this understanding to contemporary problems and issues. Specifically the social science requirement helps students:

- Gain insight into the methods of social sciences,
- Understand historical and social frameworks,
- Understand how individuals relate to the social world, past and present.

Disciplines Included:

Anthropology, Economics, Geography, History, Political Science, Psychology, Sociology

Criteria for Designating a Social Science Course as State Guaranteed:

The content of a “state guaranteed” social science course shall be designed to:

1. Provide **content knowledge** in one of the following areas:
 - a) Historical, cultural, or social frameworks that explore and compare achievements, issues, and characteristics of the world and its different cultures.
Or
 - b) United States historical framework exploring important aspects of American culture, society, politics, economics or its position in the world.
OR
 - c) Understanding of contemporary economic or political systems
OR
 - d) Understanding how geography creates a sense of identity, shapes a culture, and influences the economics of a region.
OR
 - e) Knowledge of human behavior, including learning, cognition, and human development.
2. Ability to use the social sciences to analyze and interpret issues.
3. Understand diverse perspectives and groups.

AND

4. Competency in Critical Thinking
5. Competency in Written Communication or Technology.

Maximum number of credits in social sciences that will be guaranteed to transfer
9 credits, but at least two courses must address a different knowledge area criterion (1 a–e).

COMPETENCY: TECHNOLOGY

General Education

Guiding Principle:

The integration of appropriate technology competencies and skills support the mastery of content of general education. The use of technology should never suppress content or diminish the rigor of general education courses.

Definition of technology competency:

Ability to select and apply contemporary forms of technology to solve problems or compile information

Criteria

1. Information Acquisition:

- Conceptually understand available networking tools (e.g. web search engines, web sites), select, discriminate and evaluate sources for credibility and appropriateness.

2. Application:

- Achieve a familiarity with contemporary technology that allows a student to identify which technologies are useful and/or appropriate.

3. Analysis:

- Use appropriate technology to analyze information or data as required in a field of study.

4. Synthesis:

- Integrate information or data from a variety of sources to form a position or present a point of view.

5. Communication:

- Use current technology as a venue for information sharing (e.g. post a web page).

6. Evaluation:

- Determine which technologies apply to the task, understand the limitations of those technologies and know how to combine technologies effectively.

COMPETENCY: WRITTEN COMMUNICATION

Criteria apply to all general education courses that develop written competency
(not course specific)

Guiding Principle:

Learning to write is a complex process that takes place over time with continued practice and informed guidance. While qualified writing professionals help students learn writing skills and knowledge of writing conventions, written communication competency is developed as students apply this knowledge across the curriculum. The statements below describe the level of competency in expository writing that students develop and refine in the general education curriculum.

Definition:

The ability to write clearly and concisely.

Criteria:

1. Information Acquisition
 - Find, select, and synthesize information from appropriate primary and secondary sources.
2. Application
 - Apply knowledge of syntax, grammar, punctuation and spelling in writing assignments.
 - Use appropriate vocabulary, formats, and documentation for papers and other writing tasks.
3. Analysis
 - Critique own and others' work.
4. Synthesis
 - Integrate own ideas with those of others.
5. Communication
 - Convey a primary theme or message in a written text.
 - Use a variety of research tools, including current technological resources.
6. Evaluation
 - Clarify ideas and improve the quality of a written paper by using feedback.

See Communication Content Criteria for course-specific criteria.

TOPIC: REPORT ON OUT-OF-STATE INSTRUCTION

PREPARED BY: ANDREW BRECKEL III

I. SUMMARY

The Commission holds statutory responsibility to approve instruction offered out-of-state beyond the seven contiguous states. By action of the Commission in 1986 the Executive Director may act for the Commission to approve or deny requests from governing boards for approval of courses and programs to be offered by their institutions. This agenda item includes instruction that the Executive Director has certified as meeting the criteria for out-of-state delivery. It is sponsored by the Board of Regents of the University of Colorado and the Trustees of The State Colleges.

II. BACKGROUND

Prior to 1983, instruction out-of-state was offered at will by Colorado institutions, primarily through the Extended Studies Program, but an Attorney General opinion of July 3, 1980, concluded that there was no authorizing legislation and out-of-state programs were discontinued. In 1983, the General Assembly enacted legislation that authorized non-state-funded out-of-state instruction but also required governing board approval. When the instruction is beyond the contiguous states, Commission approval is required as well.

At its meeting of May 2, 1986, the Commission delegated authority to the Executive Director to determine when out-of-state instruction beyond the contiguous states complies with statutory requirements. In June 1986, the Commission received the first notification of out-of-state instruction certified by the Executive Director. Additional approved out-of-state instruction is reported to the Commission as it is received and reviewed.

III. ACTION

The Executive Director has approved the following out-of-state instruction.

The Trustees of The State Colleges of Colorado has submitted a request for out-of-state instructional programs, delivered by Adams State College.

ED 589: Modern Concepts in Coaching Football to be offered in Nevada from February 8-10, 2002.

Ed 589: Personality Profiles, Impact on Learning to be offered in Wailuka, Hawaii from June 17-21, 2002.

Ed 589: Highly Effective Kids to be offered in Wailuku, Hawaii from June 24-28, 2002.

Ed 589: Creating Classroom Climates for the Whole Child to be offered in Wailuku, Hawaii from July 8-12, 2002.

Ed 589: Teaching the Reluctant Learner to Succeed in School to be offered in Wailuku, Hawaii from July 15-19, 2002

Ed 589: Working Successfully with Parents to be offered in Wailuku, Hawaii from July 22-26, 2002.

STATUTORY AUTHORITY

The Commission is given responsibility for approval of out-of-state instruction beyond the contiguous states in C.R.S. 23-5-116.