Memorandum of Understanding

between

The University of Colorado
Colorado Springs

and the

Joint Forces Staff College

September 10, 2002

This Memorandum of Understanding (MOU) is being established between The University of Colorado – Colorado Springs, a public educational institution of the State of Colorado (hereinafter referred to as "UCCS"), and represented by its Chancellor, and the Joint Forces Staff College (JFSC) of the Department of Defense, represented by its Commandant.

I
RESPONSIBILITIES

1. UCCS will grant transfer credit to individuals who have completed the JFSC Joint Professional Military Education Phase II, as described in the American Council of Education (ACE) guide.

2. Transfer Credit will be accepted as follows, for the particular graduate programs noted:

Master of Arts Degree in Communications

Up to six hours will be accepted as transferred towards electives, for Joint Forces Staff College (JFSC) courses in

"Joint and Combined Staff Officer" Version 2

Choice of 2 courses @ 2-3 graduate credits each from the following:
International Relations (3 credits)
Operations Analysis and Management (3 credits)
Crisis Mitigation (2 credits)

"Joint and Combined Warfighting" Version 2

Choice of 2 courses @ 2-3 graduate credits each from the following:
Organizational Planning (3 credits)
Operations Analysis and Management (3 credits)
Emergency Management Response (2 credits)

Master of Public Administration Degree

Up to nine hours will be accepted as transferred towards electives, for Joint Forces Staff College (JFSC) courses in

"Joint and Combined Staff Officer" - Version 2

Choice of 3 courses total @ 3 graduate credits each)
International Relations
Organizational Planning
Operations Analysis and Management
Computer-assisted Simulation logistics Planning and Management

"Joint and Combined Warfighting" - Version 2

Choice of 3 courses total @ 3 graduate credits each

Organizational Planning
Operations Analysis and Management
Computer-assisted Simulation logistics Planning and Management
National Security Studies

Master of Arts in Applied Geography

Up to five hours will be accepted as transferred, for Joint Forces Staff College (JFSC) courses in

"Joint and Combined Staff Officer" Version 2
or
"Joint and Combined Warfighting" - Version 2

Five hours credit for graduate electives in the thesis or non-thesis option.

Master of Science in Mechanical Engineering – Space Systems Focus

Up to six hours will be accepted as transferred, for Joint Forces Staff College (JFSC) courses in

"Joint and Combined Staff Officer" Version 2
or
"Joint and Combined Warfighting" - Version 2

Three hours credit granted for *MAE 5090 Space Mission Operations*, and
Three hours credit for *MAE 5596 Space Mission Design*

Master of Science in Mechanical Engineering – Manufacturing Engineering Focus

Up to six hours will be accepted as transferred, for Joint Forces Staff College (JFSC) courses in

"Joint and Combined Staff Officer" Version 2
or
"Joint and Combined Warfighting" - Version 2

Three hours credit for *MAE 5560 Engineering Project Management*, plus
Three hours credit for an elective course

Master of Engineering in Engineering Management

Up to fifteen hours will be accepted as transferred, for Joint Forces Staff College (JFSC) courses in

"Joint and Combined Staff Officer" Version 2
or
"Joint and Combined Warfighting" - Version 2

Three hours credit for *BCOM 550 Professional Business Communication*
Three hours credit for *BUAD 560 Business, Government, and Society*
Three hours credit towards a *Computer Science/Software System* elective
Six hours additional credit for any two of the following:

ACCT 600 Contemporary Issues in Accounting
INFS Information Systems
LHRM 620 Management Organization Development and Change
MKTG 630 Marketing Management
OPTM 600 Operations: Competing Through Capabilities

Note: All transfer credits accepted will be brought in as block since JFCS is pass/fail and the pass equates to a "B" or better at JFSC. In some cases, additional credit for course work completed at other graduate schools may be accepted.

3. If the student wishes to pursue the MBA degree, and does not have an undergraduate background in Business, preparatory courses are frequently required. These preparatory courses include:

BCOM 550	Professional Business Communication
BUAD 550	Fundamentals of Economics
BUAD 560	Business, Government and Society
QUAN 550	Fundamentals of Business Statistics

However, graduates from JFSC version 2 in either course (Staff or Warfighting) may not be required to take some or all of these preparatory courses.

4. Information on these degree programs plus others that may be attractive but cannot allow transfer credit is included in Appendix A to this MOU.

5. In order for a JFSC graduate to be granted the transfer credits, the applicant must meet UCCS's criteria for transfer as set forth in the applicable catalog at the time the student requests acceptance of the transferred credits, and must meets normal graduate program admission requirements. The student must also arrange for two official copies of their transcript are forwarded from JFSC to UCCS, and courses on the transcript must be consistent with the credit recommendations in the ACE guide. On the admissions application, or cover letter, the student should indicate they are applying for graduate admission under the "Special JFSC Transfer Program."

6. All requirements established for the completion of the program must be fulfilled within six consecutive years after admission to the program.

7. UCCS will not accept the transfer of partial credit, i.e. either the entire JFSC Joint and Combined Staff Officer course, or the Joint and Combined Warfighting course must have been completed.

8. JFSC will publicize availability of the UCCS program to JFSC personnel within established JFSC policy guidelines.

9. JFSC and UCCS will seek opportunities for periodic exchanges of faculty in Fellows Program.

10. JFSC and UCCS will, within resources available, jointly plan and conduct periodic symposia and workshops on topics of mutual interest and benefit.

11. For the purpose of this agreement, active duty military graduates stationed in Colorado are eligible, using a military certification, for UCCS in-state graduate tuition at the prevailing rates for the degree as published in the fee schedule. More specific information will be available at the Education Office at respective military installation. Civilian graduates will pay the in-state or out-of-state graduate tuition rate depending on their residency status.

II
PROCEDURES

UCCS and JFSC will designate a point of contact for the administration of this agreement. The points of contact will establish working procedures between themselves.

III
FINANCE

UCCS and JFSC will bear the cost of its own administration of this MOU. No exchange of funds between the parties is contemplated by this agreement. Expenditures are subject to funds available and fiscal guidelines.

IV
DISPUTES

Disagreements between UCCS and JFSC arising under or relating to this agreement shall be resolved only by consultation between the parties and shall not be referred to any individual or forum for settlement.

V
EFFECTIVE DATE AND TERM

This MOU shall become effective upon the last signature of the duly designated representatives of UCCS and JFSC. It shall remain in effect for a minimum period of three (3) years from that date. The MOU will automatically be extended for another three (3) year period, provided neither party to the MOU objects. The parties should review the relationship and MOU prior to renewing the MOU for a third three (3) year period.

VI
TERMINATION

Either UCCS of JFSC may terminate the MOU at any time, provided that a minimum of 60 days written notice is provided the other party. Termination will occur on the beginning date of the scholastic term next following.

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed as of the date set forth herein by their duly authorized representatives.

FOR THE UNIVERSITY OF COLORADO AT COLORADO SPRINGS	FOR THE JOINT FORCES STAFF COLLEGE
Pamela Shockley	
Pamela Shockley, PhD Chancellor	Roosevelt Mercer, Jr. Brigadier General, USAF Commandant
Date: 9/23/02	Date: 5 NOV 02

Appendix

Program Descriptions

Master of Arts in Communications
Master of Public Administration
Master of Criminal Justice
Master of Arts in Applied Geography
M.S. Mechanical Engineering – Space Systems
M.S. Mechanical Engineering – Manufacturing Engr.
Master of Engineering in Engineering Management
Master of Business Administration
M.S. Computer Science

Master of Arts in Communication

Two plans lead to an MA in Communication. Plan I is with thesis and requires a minimum of 33 hours of coursework, among which 6 hours may be thesis credit. Plan II is without thesis and requires a minimum of 36 hours of coursework. Both options require 15 hours of core courses. Therefore, 18-21 hours of elective course opportunities remain, 3 of which must be taken from outside the department. No more than 6 hours of approved graduate coursework may be transferred to fulfill the degree requirements for the MA in Communication. The configuration of the degree plan is as follows:

Core (required) courses - 15 hours (all courses offered yearly)

Comm 601	Introduction to Graduate Studies
Comm 551	Introductory Quantitative Methods for Communication Research
Comm 560	Contemporary Theories of Human Communication
Comm 651	Intermediate Quantitative Methods for Communication Research
Comm 580	Qualitative Research Practices in Communication Studies

Elective courses - 18-21 hours

Plan I (Thesis)

Minimum of 3 (maximum of 5) graduate elective courses in communication (9-15 credits)
One graduate level course from outside the department (3 credits)*
Maximum of 6 hours of thesis credit (6 credits)

Plan II (Non-thesis)

Six graduate elective courses in communication (18 credits)
One graduate level course from outside the department (3 credits)*

***By special arrangement, JFSC graduates may transfer the following JFSC courses:**

"Joint and Combined Staff Officer"

Version 2 (choice of 2 courses @ 2-3 graduate credits each)

International Relations (3 credits)
Operations Analysis and Management (3 credits)
Crisis Mitigation (2 credits)

"Joint and Combined Warfighting"

Version 2 (choice of 2 courses @ 2-3 graduate credits each)

Organizational Planning (3 credits)
Operations Analysis and Management (3 credits)
Emergency Management Response (2 credits)

Master of Public Administration (MPA)

The 36-hour MPA degree requires 18 hours of core courses. The capstone project (advanced seminar) accounts for 3 hours. Therefore, 15 hours of elective course opportunities remain in the degree plan. *The Graduate School of Public Affairs (GSPA) allows up to 9 hours of approved transfer credit into the MPA degree.* The configuration of the degree plan is:

Core (required) courses - 18 hours

PAD 5001 Governance and institutions (Fundamentals of Public Administration)
PAD 5002 Organization Management & Change
PAD 5003 Information and Analytic Methods
PAD 5004 Economics and Public Finance
PAD 5005 The Policy Process and Democracy
PAD 5006 Leadership and Professional Ethics

Total: 18 hours

Elective courses - 15 hours

Total: 15 hours

(Up to 9 hours can be transfer credits, and, if desired, 9 hours of criminal justice coursework from our MCJ degree can be included in the 15 hours.)

DOD Joint Forces Staff College (JFSC) courses that may be accepted as transfer credit courses:

"Joint and Combined Staff Officer" - Version 2 - (Choice of 3 courses total @ 3 graduate hours each)

International Relations
Organizational Planning
Operations Analysis and Management
Computer-assisted Simulation logistics Planning and Management

"Joint and Combined Warfighting" - Version 2 - (Choice of 3 courses total @ 3 graduate hours each)

Organizational Planning
Operations Analysis and Management
Computer-assisted Simulation logistics Planning and Management
National Security Studies

MPA Advanced Seminar in Public Policy and Management - PAD 5361 (Capstone Project) 3 hours

Total: 3 hours

MPA DEGREE TOTAL HOURS **36 hours**

Note: GSPA requires that individuals be admitted to our graduate school before any transfer credit is approved and granted.

Master of Criminal Justice (MCJ)

(Conferred from the CU-Denver Campus with courses taken in Colorado Springs)

The 36-hour MCJ degree requires 12 hours of core courses. The capstone project (advanced seminar) accounts for 3 hours. Therefore, 21 hours of elective course opportunities remain in the degree plan. *The Graduate School of Public Affairs (GSPA) allows up to 9 hours of approved MPA coursework as transfer credit into the MCJ degree.* The configuration of the degree plan is:

Core (required) courses - 12 hours

CJ 5000 Law and Social Control
CJ 5100 Administration of Criminal Justice
CJ 5120 Nature and Causes of Crime
CJ 5321 Research Methods in Criminal Justice

Total: 12 hours

Elective courses - 21 hours

Total: 21 hours

Advanced Seminar/Professional Practicum - CJ 5361 (Capstone Project) 3 hours

Total: 3 hours

MCJ DEGREE TOTAL HOURS **36 hours**

Note: *The MCJ degree is a CU-Denver degree with courses taken in Colorado Springs. The MCJ Program Director is on the GSPA Denver campus, with an Associate Dean overseeing the MCJ Program in Colorado Springs. At this time, no direct transfer of JFSC credits have been approved by the MCJ Director.*

Some other advantages of the MPA and MCJ degree programs are:

- *All "core" (required) courses in the MPA and the MCJ are offered every calendar year on a rotation basis.*
- *"On line" courses. All MPA courses are on line, and can be taken on line during the degree program. Military students could finish a GSPA MPA degree even upon a transfer to another state or country.*
- *GSPA is a nationally ranked graduate school of public affairs (top 14%), and is accredited by the National Association of Schools of Public Affairs and Public Administration (NASPAA).*

Master of Arts in Applied Geography

Department of Geography and Environmental Studies
University of Colorado at Colorado Springs

The Department of Geography and Environmental Studies welcomes graduates from the Joint Forces Staff College (JFSC) interested in pursuing a Master of Arts in Applied Geography. This degree offers graduate level education enabling students to address international, national, and local concerns through applied geographic research. Graduates of the program will have integrative skills that link human activity to natural systems and that apply a spatial perspective to human and natural processes. Our MA program has four areas of emphasis:

- Physical systems, including geomorphic, climatic, biologic, and hydrologic processes
- Population and Society, including urban community development
- Natural hazards mitigation and policy issues
- Applied uses of geographic information systems (GIS) and remote sensing

We accept 5 transfer credits from any completed program within the Joint Forces Staff College. The MA program requires 30 credit hours of work. You may pursue either a thesis on non-thesis option.

While graduates of the Joint Forces Staff College could follow any of these tracks, we suggest this streamlined approach to guarantee completion in a 3 year timeframe:

Course	Credits	Frequency Offered
GES 500: Quantitative Methods	4	every year
GES 501: Geographic Research	3	every year
GES 505: Introduction to GIS	4	every semester
GES 506: Advanced Remote Sensing	4	every year
GES 509: Image Processing	4	every year
Transfer Credits from JFSC	5	n/a
Subtotal:	24	
Option 1: Thesis		
GES 700: Thesis:	6	at student's own pace
Total:	**30**	
Option 2: Non-Thesis		
Choose 2 topical courses from the following:		
GES 508: Advanced GIS	4	every year
GES 522: Climatology	3	every other year
GES 526: Biogeography	4	every other year
GES 531: Geomorphology	4	every other year
GES 523: Mountain Environmental Systems	3	every other year
GES 534: Soils	4	every other year
GES 551: Hydrology	3	every other year
GES 555: Disasters and Society	3	every other year
GES 561: Urban Geography	3	every other year
GES 460: Cultural Landscape	3	every other year
GES 573: Population Geography	3	every other year
Subtotal:	6-8	
Total:	**30-32**	

MASTER OF SCIENCE
in
MECHANICAL ENGINEERING

Space Systems Focus

The Master of Science in Mechanical Engineering degree with an academic focus on Space Systems has been designed for working professionals involved in civil, military, or commercial space activities. Students take a sequence of five required courses and three courses in an emphasis area leading up to a Master's thesis. An area of emphasis may be selected in **Space Operations**, **Spacecraft Vehicle Control**, **Astrodynamics**, or **Space Applications**. The degree is administered and taught at the CU-Colorado Springs campus with the majority of courses offered in the evening to accommodate the schedules of working students.

Program Prerequisites: Two semesters of calculus-based physics; a programming course in a higher order language; linear systems theory; engineering probability; linear algebra; and differential equations are required for admission to the program.

Degree Requirements

(5 Required Courses - 15 Hours)

MAE 5090 Space Mission Operations **(3 hr JFSC, Version 2 Credit)**
MAE 5091 Space Environment
MAE 5410 Fundamentals of Astrodynamics
MAE 5495 Launch, On-Orbit and Entry Dynamics
MAE 5594 Space Communications Systems Design

Emphasis Area (3 Courses - 9 hours)

Space Operations
MAE 5425 Spacecraft Attitude Control
MAE 5595 Space Mission Analysis
MAE 5596 Space Mission Design **(3 hr JFSC Version 2 Credit)**

Spacecraft Vehicle Control
MAE 5425 Spacecraft Attitude Control
MAE 5456 Spacecraft Actuators & Sensors
MAE 6432 Space Navigation & Guidance

Astrodynamics
MAE 5411 Space Operations Analysis
MAE 5419 Trajectory Optimization
MAE 5430 Orbit Perturbation Theory

Space Applications
MAE 5092 Remote Sensing in Space
MAE 5391 Rocket Propulsion
MAE 5460 GPS Principles and Applications

Thesis(6 hours)
MAE 7000 Masters Thesis

MASTER OF SCIENCE
in
MECHANICAL ENGINEERING

Manufacturing Engineering Focus

The Master of Science in Mechanical Engineering degree with an academic focus on manufacturing has been patterned after recommendations of a select committee of the Society of Manufacturing Engineers and was developed as a cooperative university-industry effort. As a result, the primary focus is on techniques for improvement of total quality and the attainment of a competitive edge in manufacturing processes. Students select a sequence of 8 courses (24 hours) leading up to a Master's thesis. The degree is administered and taught at the CU-Colorado Springs campus with the majority of courses offered in the evening to accommodate the schedules of working students.

Program Prerequisites: Evidence of mathematical maturity equivalent to 3 semesters of calculus, linear algebra, and probability & statistics. Knowledge beyond the introductory level of mechanical engineering from either academic coursework or professional experience.

Degree Requirements

1. 6 hours of Graduate Mathematics
2. 1 course (3 hours) from each area:

3. Contemporary Manufacturing Fundamentals
   MAE 5570 Design for Manufacturability
   MAE 5574 Cellular Manufacturing

   Manufacturing Analysis
   MAE 5571 Analysis & Design of Experiments
   MAE 5095 Engineering Simulation

   Manufacturing Engineering
   MAE 5190 Vibrations
   MAE 5205 Fracture Mechanics
   MAE 5450 Robotics

   Manufacturing: Issues and the Future
   MAE 5559 Manufacturing Technology and Factory of the Future
   MAE 5575 Issues in Manufacturing

   Engineering Project Management
   MAE 5560 Engineering Project Management **(3 hr JFSC Version 2 Credit)**

4. One additional course from above. **(3 hr JFSC Version 2 Credit)**
5. 6 hours MAE 7000 Master's Thesis

MASTER OF ENGINEERING
in
ENGINEERING MANAGEMENT

The primary objective of this degree program is to integrate knowledge and skills from engineering and business disciplines to allow students to develop effective responses to rapidly changing technological and business environments. The program recognizes that many engineers evolve into management/supervisory roles and require a blend of technical advanced engineering and business/management education to succeed in today's technical marketplace.

The program prepares engineers for effective participation in management of technology, management of technology-based organizations, and management of technological change. This focus is achieved through a careful balance of graduate course work in business, management, and a technical area of the student's work/academic interests. The program is administered and taught at the CU-Colorado Springs campus with the majority of courses offered in the evening to accommodate the schedules of working students.

The degree program consists of 30 semester hours of graduate coursework divided between required, specialization area, and elective courses, and a creative research investigation that reflects course material from a significant portion of all academic coursework.

Program Prerequisites

An accredited BS degree in an engineering or science discipline.
Experience in a commercial, civil, or government engineering/science career field.

Degree Requirements

1. **Required Courses: 3 Courses - *9 hours***
   BCOM 550: Professional Business Communication **(3 hr JFSC Version 2 Credit)**
   BUAD 556: Business, Government & Society **(3 hr JFSC Version 2 Credit)**
   MAE 5093: Systems Engineering
2. **Specializatin Area: 5 Courses - *15 hours***
   Computer Science/Software System **(3 hr JFSC Version 2 Credit)**
   Electrical and Computer Engineering
   Mathematics
   Manufacturing
   Mechanical Engineering
   Space Systems

3. **Elective Courses: 2 Courses - *6 hours* (6 hr JFSC Version 2 Credit)**
   ACCT 600: Contemporary Issues in Accounting
   INFS 620: Information Systems
   LHRM 620: Management Organization Development & Change
   MKTG 620: Marketing Management
   OPTM 600: Operations: Competing Through Capabilities

4. **Research Investigation**
   Written and orally presented investigative work presenting a current issue/concern in specialization area and encompassing a significant portion of the graduate coursework.

Master of Business Administration (MBA)

The MBA degree consists of 36-credit hours of course work and 12-credit hours of Preparatory course work. The 12 hours of Preparatory course work could potentially be waived based on previous academic credit, including credits received from the Joint Forces Staff College. Students who are working full-time and attending classes part-time generally take 15 to 18 credits in a calendar year. All Preparatory and Core classes are offered twice every calendar year, and the elective courses are offered on a rotating basis. Following this schedule, the MBA degree can be completed in two to three years. Students can also choose to take classes at a slower pace, and the added flexibility of MBA classes offered on-line means that military students who had not yet completed the degree could finish an MBA degree upon transfer to another state or country.

The MBA degree plan is as follows:

Preparatory courses – 12 credit hours
(possibly waived based on previous academic work)

BCOM 550	Professional Business Communication
BUAD 550	Fundamentals of Economics
BUAD 560	Business, Government and Society
QUAN 550	Fundamentals of Business Statistics

Core courses – 21 credit hours
(required of all students in the program)

ACCT 600	Contemporary Issues in Accounting
FNCE 600	Corporate Financial Management
INFS 600	Information Systems
MGMT 600	Leading and Managing in Changing Times
MKTG 600	Marketing Strategy
OPTM 600	Operations: Competing Through Capabilities
BUAD 650	Strategic Management

Electives – 15 credit hours

These 15 credit hours (5 courses) are chosen from among all of the available 600-level MBA electives. These electives can be any 5 MBA electives for a General MBA, or the elective courses can be used to take courses within a particular Area of Emphasis, including the following: Accounting, Finance, Health Care Administration, Information Systems, International Business, Management, Marketing, Operations and Technology Management, Services Management, and Technology Management.

The Master of Business Administration at the University of Colorado at Colorado Springs is a program of exceptional quality and is accredited by AACSB International – The Association to Advance Collegiate Schools of Business. This accreditation is the top accreditation for business schools and is held by only 30% of business schools. This translates for students to a high quality program taught by Ph.D. qualified faculty and classes with high caliber fellow students. Graduates from JFSC would find an excellent MBA program with flexibility and excellent application to career desires.

Master of Science in Computer Science

Admission: Applicants are expected to hold a B.S. degree in computer science with an overall minimum GPA of 3.0 on a scale of 4.0. In special cases a B.S. in a related technical field may also suffice.

Degree Requirements: Students must acquire a total of 30 credit hours in order to graduate. The program has two plans. Plan I requires a total of 24 hours of course credit and 6 hours of thesis credits. Plan II requires a total of 27 hours of course credit and 3 hours of project credits. The minimum GPA over all work is 3.0 on a scale of 4.0. A student may transfer a maximum of 9 credit hours of approved, graduate level, computer science course work from another institution. Only courses that have not already been applied to another degree and have received a minimum grade of B can be transferred.

There are 3 required courses for students that have not already taken these courses on the undergraduate level. They are: CS550, Operating Systems I, CS570 Computability, Automata and Formal Languages, and CS572 Design and Analysis of Algorithms. The remaining courses can be selected from the following set: CS522 Computer Communication, CS525 Multimedia Computing and Communication, CS531 Software Requirements Analysis and Specification, CS532 Software Design, CS533 Formal Methods of Software Systems Engineering, CS534 Software maintenance, CS536 Software Product Assurance, CS538 Object-Oriented Software Development, CS543 Database Systems II, CS551 Operating Systems II, CS555 Computer Systems Performance Evaluation, CS 567 Discrete Simulation, CS577 Computer Graphics Animation and Scientific Visualization Techniques, CS 581 Topics in Computer Graphics, CS583 Artificial Intelligence, CS584 Computer Vision, CS587 Introduction to Artificial Neural Networks and CS622 Distributed Networks. It should be noted that many of these courses have prerequisites that must have been satisfied.

Advisory Committee: Each student must select a computer science graduate faculty member to serve as this person's academic advisor. The student and academic advisor select two additional graduate faculty members to serve on the student's advisory committee. This committee must approve the student's plan of study and project or thesis proposal.

Plan of Study: The student must prepare a plan of study during his or her second semester in the program to be approved by the student's advisory committee. The plan of study identifies Plan I or Plan II, as chosen by the student, and lists the courses that the student has selected for completion of the degree. Students that have chosen Plan I must submit a thesis proposal to the advisory committee for approval. Thesis work generally consists of a background study in an area of computer science of interest to the student followed by some further development in this area. Most often the student will design, implement and test a software product, but theoretical studies are also allowed. Although original research is encouraged, this is not required. The student must write a thesis following published guidelines that must be submitted to the university library. Students following Plan II must submit a project proposal to the advisory committee for approval. A project generally consists of a large programming project. The student must write a report that will remain internal to the Computer Science Department.

Final Oral Examination: Each student must pass a final oral examination that will consist of a defense of the thesis or project work.