

**PROPOSED DEGREE PROGRAM**  
**STAGE II ABSTRACT FORM**

**Degree and/or Concentration Proposed:** Master of Engineering (M.Eng.) in Mechanical Engineering

**Department/School or College:** Mechanical Engineering / College of Engineering

**Faculty Contact Person:** Assoc. Dean of Research and Graduate Programs  
Selim Ünlü 617/353-5067 [selim@bu.edu](mailto:selim@bu.edu)

**Anticipated date of matriculation of first students:** September, 2011

**No. of initial students:** 10

**Focus of Program:**

The Master of Engineering (M.Eng.) degree is designed to prepare students for careers in industry in mechanical engineering, by complementing technical mechanical engineering courses with an engineering management focus that emphasizes elements of technology leadership and product development and management.

**Need for Program:**

Currently, the Department of Mechanical Engineering offers a Master of Science degree in Mechanical Engineering that prepares students well for careers in research. The Department does not, however, offer a degree specifically designed to prepare students for industrial careers. The proposed M.Eng. degree is geared toward the industrial and management aspects of mechanical engineering. The degree program will feature a project course rather than a research thesis, and will require up to three engineering management courses. There is a demand from industry both nationally and internationally for professional master's degrees. This M.Eng. program will allow students to gain exposure to management issues in the global marketplace in addition to a strong training in classical advanced mechanical engineering courses. It will therefore position graduates well to succeed in careers in industry.

**Relation to Existing Programs:**

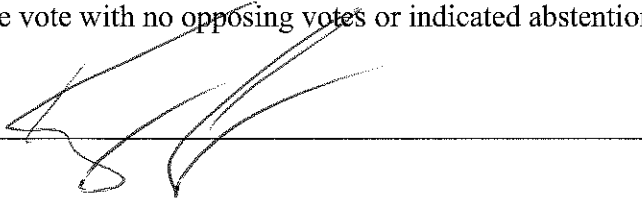
The proposed degree program will be built upon courses currently being taught in the Department of Mechanical Engineering. In 2008, the Department of Aerospace and Mechanical Engineering and the Department of Manufacturing Engineering merged into a single Department of Mechanical Engineering. As a result of this merger, a set of engineering management courses that were taught through the manufacturing programs became part of the suite of mechanical engineering courses. This new M.Eng. program is a natural progression of the departmental merger and fills a need for classically-trained mechanical engineers who are also prepared to be technology leaders and managers. Once the M.Eng. degree program is put into place, the existing M.S. in mechanical engineering will be restructured to require a research thesis. Thus, the M.S. degree will prepare students for careers in research whereas the M.Eng. degree will prepare students for careers in industry.

**Approved at College of Engineering Faculty Meeting:**

Date: 8/30/10

(by unanimous voice vote with no opposing votes or indicated abstentions)

**Signature of Dean:**



Date: 9/13/10

**Stage II Approval:** \_\_\_\_\_

Date: \_\_\_\_\_

(Office of the Provost)

**Approved Stage II Proposal Distribution (Includes deans/directors or relevant units)**

:Faculty Council Curriculum & Degrees Committee Date: \_\_\_\_\_

:University Council Curriculum & Degrees Committee Date: \_\_\_\_\_

: \_\_\_\_\_ Date: \_\_\_\_\_

: \_\_\_\_\_ Date: \_\_\_\_\_

: \_\_\_\_\_ Date: \_\_\_\_\_

**Proposed Degree Program:  
Master of Engineering (M.Eng.) in Mechanical Engineering**

proposed by:

**College of Engineering  
Kenneth Lutchen, Dean**

and

**Department of Mechanical Engineering  
Ronald Roy, Chairman**

**Executive Summary**

This document outlines the proposal for a Master of Engineering (M.Eng.) degree program in Mechanical Engineering. The M.Eng. degree will differ from the Master of Science (M.S.) degree in Mechanical Engineering in several ways: it is designed to prepare students for careers in industry; it will not require a research-based thesis; and it requires engineering management courses designed to foster technology leadership skills.

The M. Eng. degree program will be managed using the administrative, recruiting, admissions, and advising procedures that are already in place within the Department of Mechanical Engineering and the College of Engineering. The needed instructional and research laboratories already exist. However, there will be a need for additional faculty lines.

No competing degree programs exist within the University.

**1. Program Objectives**

**1.1 Introduction**

The Department of Mechanical Engineering proposes a new program leading to the degree Master of Engineering (M.Eng.) in Mechanical Engineering. The Master of Engineering (M.Eng.) degree is designed to prepare students for careers in industry in mechanical engineering, by complementing technical mechanical engineering courses with an engineering management focus that emphasizes elements of technology leadership and product development and management.

**1.2 Rationale and Need for the Program**

Currently, the Department of Mechanical Engineering offers a Master of Science degree in Mechanical Engineering that prepares students well for careers in research. The Department does not, however, offer a degree specifically designed to prepare students

for industrial careers. The proposed M.Eng. degree is geared toward the industrial and management aspects of mechanical engineering. The degree program will feature a project course rather than a research thesis, and will require up to three engineering management courses. There is a demand from industry both nationally and internationally for professional master's degrees. This M.Eng. program will allow students to gain exposure to management issues in the global marketplace in addition to a strong training in classical advanced mechanical engineering courses. It will therefore position graduates well to succeed in careers in industry.

### **1.3 Employment Outlook for Program Graduates**

According to the U.S. Bureau of Labor Statistics, “overall engineering employment is expected to grow by 11 percent over the 2008-2018 decade... Competitive pressures and advancing technology will force companies to improve and update product designs and to optimize their manufacturing processes. Employers will rely on engineers to increase productivity and expand output of goods and services”. Employment growth for mechanical engineers, already the second largest sector within engineering, is expected to be 6 percent. Additionally, the U.S. Bureau of Labor Statistics states that “employment of engineering and natural sciences managers is expected to grow 8 percent over the 2008-2018 decade... Engineers and scientists with advanced technical knowledge and strong communication skills will be in the best position to become managers. Because engineering and natural sciences managers are involved in the financial, production, and marketing activities of their firm, business management skills are also advantageous for those seeking management positions.” ([www.bls.gov](http://www.bls.gov))

The proposed M.Eng. program in Mechanical Engineering will prepare our students well to compete for these engineering management jobs in the coming decade.

Although it is expected that most of the graduates of the M.Eng. program will go to industry, it is possible that this program will also become a feeder of a small number of students to the Ph.D. program.

### **1.4 Relationship to Existing Programs at Boston University**

The proposed degree program will be built upon courses currently being taught in the Department of Mechanical Engineering. In 2008, the Department of Aerospace and Mechanical Engineering and the Department of Manufacturing Engineering merged into a single Department of Mechanical Engineering. As a result of this merger, a set of engineering management courses that were taught through the manufacturing programs became part of the suite of mechanical engineering courses. This new M.Eng. program is a natural progression of the departmental merger and fills a need for classically-trained mechanical engineers who are also prepared to be technology leaders and managers.

Many of the engineering management courses are taught through the Department's Distance Learning Program. It is expected that there will be a synergistic relationship between the DLP and the new M.Eng. degrees in that the M.Eng. program will utilize the

courses taught through the DLP, and the DLP will be a natural feeder for students into the M.Eng. degree program.

Once the M.Eng. degree program is put into place, the existing M.S. in mechanical engineering will be restructured to require a research thesis (currently, it is an option). Thus, the M.S. degree will prepare students for careers in research whereas the M.Eng. degree will prepare students for careers in industry.

The creation of an M.Eng. degree in Mechanical Engineering also aids in fulfilling a goal stated in the College of Engineering Strategic Vision 2010 document of creating a suite of new professional masters programs. Currently, M.Eng. degrees are offered in Biomedical Engineering and in Systems Engineering. Proposals for new M.Eng. degrees are also being prepared in Manufacturing Engineering, Material Science and Engineering, Electrical Engineering, Computer Engineering, and Photonics.

### **1.5 Documentation of Consultation with Cognate Units**

This proposal was prepared by the Department of Mechanical Engineering. It has been approved by the Department of Mechanical Engineering, the College of Engineering Faculty, and the College of Engineering Dean.

In the preparation of the College of Engineering Strategic Vision 2010, an *ad hoc* committee which ultimately determined the goal of creating a suite of professional masters programs within the College included members of cognate natural science departments within the College of Arts and Sciences as well as cognate departments within the School of Management.

### **1.6 Similar Programs at Other Universities**

In the 10 Year Plan of the Department of Mechanical Engineering, prepared in the Spring of 2010, seven peer institutions were identified: Duke University, Northwestern University, Rice University, University of Pennsylvania, University of Pittsburgh, Vanderbilt University, and Washington University. Additionally, comparisons are made with other local institutions: Northeastern University, Rensselaer Polytechnic Institute, and Cornell University. Almost all of these peer institutions offer some form of professional masters degrees, and many offer degrees in Mechanical Engineering which are non-thesis-based.

At Duke, the Pratt School of Engineering offers a Master of Engineering Management Program. The degree is completed in one full year and includes four required management courses, four technical electives (which could be in mechanical engineering), a summer internship, and participation in a special seminar series featuring leaders from industry.

The Robert R. McCormick School of Engineering and Applied Sciences at Northwestern University offers seven different professional Master's programs. The Department of

Mechanical Engineering is most closely aligned with two of them, a two year full-time dual degree MBA/MEM (Master's of Engineering Management), and a two year part-time (weekend) Master of Product Development.

At Rice University, the Department of Mechanical Engineering and Materials Science offers a professional Master's degree in Mechanical Engineering (M.M.E.) which can include a research project but does not require a thesis.

University of Pennsylvania's Engineering School of Engineering and Applied Science has an Executive Master's in Technology Management Program which features a mix of management and technology courses and an Emerging Technologies Seminar. The Department of Mechanical Engineering and Applied Mechanics (MEAM) offers a MSE degree which includes a required seminar but no thesis.

At the University of Pittsburgh, the Department of Mechanical Engineering and Materials Science offers a professional version of the MS degree which does not require a thesis, but is also strictly engineering.

Vanderbilt University's Department of Mechanical Engineering has a Master of Engineering degree (ME) in Mechanical Engineering.

The Department of Mechanical, Aerospace & Structural Engineering (MASE) at Washington University in St. Louis offers a Master of Engineering (M.Eng.) degree in Mechanical Engineering. It is a non-thesis degree consisting of engineering and mathematics courses. Additionally, its School of Engineering & Applied Science has a Master of Engineering Management (MEM) degree which consists of technology management courses.

The Northeastern University College of Engineering offers several professional masters programs, including an MS in Engineering Management. This program combines courses in engineering and management and includes a thesis or a project.

At Rensselaer Polytechnic Institute, the Department of Mechanical, Aerospace, and Nuclear Engineering (MANE) offers an M. Eng. degree in Mechanical Engineering. This is a program that does not require a thesis, but does require some type of culminating project, internship, or similar experience. Up to one-fifth of the credits could be from outside of engineering/science (could be management).

Cornell University's College of Engineering offers Master of Engineering (MEng) programs in several fields, including Mechanical Engineering. The MEng degree is completed in one year, involves a design project rather than a thesis, and allows up to two non-technical courses.

## **2. Academic Program**

### **2.1 Overview**

The program will make use of Mechanical Engineering core courses and Engineering Management courses already in place in the Department of Mechanical Engineering. No new courses will be required.

### **2.2 Catalog Copy for Proposed Program**

Master of Engineering students are required to complete a minimum of 32 credit hours applicable to the degree according to the program planning sheet. No master's thesis is required. All 32 credits must be at the 500 level or above. The 32 credits must be selected as follows:

- 3 courses (12 credits) must be Mechanical Engineering Core Courses
- 2 courses (8 credits) must be Engineering Management Courses
- 3 courses (12 credits) may be Engineering/Science electives (any 500/700 level engineering or physical science course, with no more than one course from the approved list of Engineering Management Courses)

In addition to these course requirements, students must complete a project experience, approved by the student's academic advisor. The project requirement could be met by completing a project in one of the courses used to satisfy the above course requirements, or by working in one of the college's research laboratories.

### **Mechanical Engineering Core Courses**

ME 503 *	Kinetic Processes in Materials
ME 504 *	Polymers and Soft Materials
ME 505 *	Thermodynamics and Statistical Mechanics
ME 508 *	Computational Methods in Materials Science
ME 507 *	Process Modeling and Control
ME 508 *	Computational Methods in Materials Science
ME 510 *	Production Systems Analysis
ME 514 *	Simulation
ME 515 *	Vibration of Complex Mechanical Systems
ME 516 *	Statistical Mechanical Concepts in Engineering
ME 519	Theory of Heat Transfer
ME 520 *	Acoustics I
ME 521 *	Continuum Mechanics
ME 522	Underwater Acoustics
ME 523 *	Mechanics of Biomaterials
ME 524 *	Skeletal Tissue Mechanics
ME 526	Simulation of Physical Processes
ME 529	Thermodynamics and Kinetics of Materials and Processes

ME 531	Phase Transformations
ME 532	Atomic Structure and Dislocations in Materials
ME 534	Materials Technology for Microelectronics
ME 541	Classical Thermodynamics
ME 542 *	Advanced Fluid Mechanics
ME 544	Networking the Physical World
ME 545 *	Electrochemistry of Fuel Cells and Batteries
ME 555 *	MEMS: Fabrication and Materials
ME 560 *	Precision Machine Design and Instrumentation
ME 570	Robot Motion Planning
ME 579 *	Microelectronic Device Manufacturing
ME 580	Theory of Elasticity
ME 581	Experimental Techniques in Solid Mechanics
ME 582 *	Mechanical Behavior of Materials
ME 702	Computational Fluid Dynamics
ME 704	Adaptive Control of Dynamic Systems
ME 706	Acoustics and Aerodynamic Sound
ME 707 *	Finite Element Analysis
ME 709 *	Turbulent Flows
ME 710 *	Dynamic Programming and Stochastic Control
ME 713	Viscous Flows
ME 714 *	Advanced Stochastic Modeling and Simulation
ME 715 *	Waves in Fluids
ME 718	Advanced Topics in Nanotechnology
ME 720 *	Acoustics II
ME 721	Acoustic Bubble Dynamics
ME 722	Wave Propagation in Solids
ME 723	Waves in Random Media
ME 724 *	Advanced Optimization Theory and Methods
ME 725 *	Queuing Systems
ME 726 *	Biomaterials and Tissue Engineering I
ME 727 *	Biomaterials and Tissue Engineering II
ME 729	Non-linear Acoustics and Sonic Booms
ME 732	Combinatorial Optimization and Graph Algorithms
ME 733 *	Discrete Event and Hybrid Systems
ME 740 *	Vision, Robotics, and Planning
ME 741	Fluid-Structure Interaction
ME 742	Bio-Fluids and Structural Mechanics
ME 743	Multiphase Flow
ME 745	Computational Aeroacoustics
ME 755 *	Communication Networks
ME 761	Experimental Modal Analysis and System Identification
ME 762 *	Non-linear Control of Mechanical Systems
ME 765 *	Production System Design
ME 766 *	Advanced Scheduling Models and Methods
ME 778	Micro-machined Transducers



ME 780	Perturbation Methods in Mechanics
ME 788	Soft Tissue Biomechanics

### **Engineering Management Courses**

ME 502 *	Intellectual Assets: Creation, Protection, and Commercialization
ME 517 *	Product Development
ME 525 *	Technology Ventures
ME 550	Product Supply Chain Design
ME 583 *	Product Management
ME 584 *	Manufacturing Strategy
ME 703	Managerial Cost Accounting

\* Offered at least every two years

## **3. Program Administration**

### **3.1 Administration of the Program**

The program will be administered by the Department of Mechanical Engineering. The Department's Graduate Committee, which is appointed by the Department's Executive Committee, will be responsible for the oversight of the program. The Graduate Committee is led by the Associate Chair for Graduate Studies and is comprised of faculty members from the Department. One staff member, the Department's Graduate Programs Coordinator, is Ex-officio. All graduate-level curricular issues are first voted on by the Graduate Committee and then by the Department's faculty. Additional support for the program will come from the Department's Distance Learning Committee.

### **3.2 Recruitment and Admissions**

The recruitment of students into this program will utilize the existing mechanisms for recruiting students into all College of Engineering graduate programs. This will include an announcement in the College of Engineering magazine, as well as well-designed web sites.

The College of Engineering's Graduate Programs Office will handle admissions and financial aid. The requirements for admission will be consistent with other masters programs in the College of Engineering.

We expect that many of the future matriculates into the program will be either mechanical engineers who move directly from an undergraduate ME program into graduate study, or who are employed by larger engineering firms and are being funded by the company to obtain a graduate degree. Current undergraduates in mechanical engineering will find their job prospects greatly enhanced by the advanced technical training as well as the technology innovation preparation that will be an integral part of the program. Also, many local corporations such as Raytheon and BAE Systems require

their engineers to obtain masters degrees and we feel that many will be attracted to the M.Eng. degree program. It is also likely that some matriculates will come from the College's Late Entry Accelerated Program (LEAP).

### **3.3 Academic and Graduation Standards**

The academic requirements and graduation standards will be consistent with other masters programs in the College of Engineering. These requirements can be found in the Graduate Programs Bulletin: "Graduate students must complete their required academic program with a grade point average of at least 3.0 to graduate. The graduation GPA includes all coursework taken after matriculation applicable to the degree sought (regardless of grade obtained) and any previous courses submitted in fulfillment of program requirements."

### **3.4 Advising**

The Mechanical Engineering Graduate Programs Coordinator will track all ME M.Eng. students. All students are assigned a faculty advisor. Every student receives a Program Planning Sheet (PPS) which shows current curriculum requirements. This mode of course tracking has been in use by the College of Engineering for over 20 years and has proven to be an effective method for the purposes of planning, registration, and degree certification. The PPS and the College of Engineering Graduate Programs Bulletin describe all program and course requirements including course pre-requisites.

### **3.5 Enrollment Projections**

We expect an initial cohort of approximately 10 students for Fall 2011, and expect that many of these students will come from the Boston University undergraduate and LEAP populations. Within the next five years, we expect this to grow to 20-30 students per year. There is no minimum number needed since no new courses will be added initially.

### **3.6 Accreditation**

There will be no external accreditation of this program. M.Eng. programs in engineering are customarily not subject to accreditation review by the Accreditation Board for Engineering and Technology (ABET).

## **4. Resources**

### **4.1 Existing Faculty**

The Mechanical Engineering Core courses, and most of the Engineering Management courses are already being taught within the Department of Mechanical Engineering by the existing ME faculty. Current Mechanical Engineering faculty members are listed below:

Sean Andersson  
Stormy Attaway  
John Baillieul  
Lorena Barba  
Paul Barbone  
Eytan Barouch  
Soumendra Basu  
Calin Belta  
James Bethune  
Thomas Bifano  
Michael Caramanis  
William Carcy  
Robin Cleveland  
Dan Cole  
Theo de Winter  
Kamil Ekinci  
Caleb Farny  
Michael Gevelber  
Srikanth Gopalan  
Sheryl Grace  
William Hauser  
Yehonathan Hazony  
R. Glynn Holt

Michael Howe  
Mort Isaacson  
Cathcrine Klapperich  
Xi Lin  
Gregory McDaniel  
Elise Morgan  
Ray Nagem  
Uday Pal  
Harold Park  
James Perkins  
Allan Pierce  
Tyrone Porter  
Ronald Roy, Chairman  
Vinod Sarin  
Matthias Schneider  
Andre Sharon  
Pirooz Vakili  
Hua Wang  
Donald Wroblewski  
Victor Yakhot  
Katherine Zhang  
Xin Zhang, Associate Chair for Graduate  
Studies

#### **4.2 New Faculty and Staff Requirements**

It is expected that at least one, and possibly two (eventually), new faculty lines will be necessary to handle the increased teaching load specifically in the Engineering Management courses.

#### **4.3 Existing and Needed Library and Computer Resources**

The library and computing resources at Boston University and within the College of Engineering will also be available to students in the new M. Eng. Program. No other resources will be required.

#### **4.4 Special equipment or supply needs**

No special equipment or supplies will be necessary for the administration of the proposed M. Eng. Program.

#### **4.5 Financial Assistance Available**

We expect that most students who will enroll in the new degree program will cover their full tuition expenses. A few may receive Research Assistantships or Graduate Teaching Fellowships.

#### **4.6 Budget Projections**

The only additional cost is that required to support a single FTE. It may become necessary to exceed this, if the program grows substantially. It is important to note that this FTE will be shared with the proposed companion program – the M.Eng. in Manufacturing Engineering – which has several courses in common.

#### **4.7 Statement from Dean Lutchen Regarding Financial Resources and Space Implications**

**PRELIMINARY BUDGET FORM**

Part I-General

1. Name of Program: MEng in Mechanical Engineering

2. Proposed by: Name: Ron Ray Date: 9/13/10  
 Unit/Department: 024/205

3. Expected Start Date: 9/1/11

4. Enrollment Headcounts:	Year 1	Year 2	Year 3
a. No. of Full-Time Entering Students:	<u>10</u>	<u>12</u>	<u>13</u>
--MA Students	_____	_____	_____
--PhD Students	_____	_____	_____
b. No. of Full-Time Continuing Students	_____	_____	_____
b. No. of Part-Time Students	_____	_____	_____
c. TOTAL	<u>10</u>	<u>12</u>	<u>9</u>

5. Faculty Headcounts:			
a. No. of Full-Time Faculty*	_____	_____	_____
b. No of Part-Time Faculty	_____	_____	_____
c. TOTAL	<u>0</u>	<u>0</u>	<u>0</u>

6. Staff Headcounts:			
a. 903-No. of Full-Time Administrators*	_____	_____	_____
b. 904-No. of Part-Time Administrators	_____	_____	_____
c. 905-No. of Full-Time Support Staff*	_____	_____	_____
d. 906-No. of Part-Time Support Staff	_____	_____	_____
e. 908-No. of Student Staff	_____	_____	_____
f. TOTAL	<u>0</u>	<u>0</u>	<u>0</u>

7. No. of Courses (Credit Hours) Taught:			
a. On-Campus/MA Program	<u>8 (32)</u>	<u>8 (32)</u>	<u>8 (32)</u>
b. On-Campus/PhD Program	_____	_____	_____

8. If the program requires student housing, identify the number of required bed spaces. NA    NA    NA

9. Describe any special (program-specific) fees and/or non-standard tuition income that will be generated by the program. NA

10. Describe the extent to which the program will involve students who are enrolled in other programs at Boston University. NA

\*Object Codes 900,903,905 to be detailed in Part IV

**PRELIMINARY BUDGET FORM (CONT.)**

**Part II-Income Projections**

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
1. Tuition Income:			
a. From Full-Time Students	<u>393,140</u>	<u>471,768</u>	<u>511,082</u>
b. From Continuing Student Fees			
c. TOTAL TUITION INCOME	<u>393,140</u>	<u>471,768</u>	<u>511,082</u>
2. Fee Income (When Applicable):			
a. From Full-Time Students			
• Application Fee (\$70/Student)	<u>900</u>	<u>840</u>	<u>910</u>
• GSU Fee (\$89/Student/Semester)	<u>890</u>	<u>1,068</u>	<u>1,157</u>
• Health Fee (\$69/Student)	<u>690</u>	<u>828</u>	<u>897</u>
• Program Fee (\$151/Student)	<u>150</u>	<u>180</u>	<u>195</u>
• Other Fees (Please Specify)			
_____			
_____			
_____	<u>2,430</u>	<u>2,916</u>	<u>3,159</u>
b. From Part-Time Students			
• Application Fee (\$65/Student)			
• Registration Fee (\$40/Student)			
• Other Fees (Please Specify)			
_____			
_____			
_____			
c. TOTAL FEE INCOME	<u>2,430</u>	<u>2,916</u>	<u>3,159</u>
3. Other Income (Please Specify):			
_____			
_____			
_____			
TOTAL OTHER INCOME			
TOTAL INCOME	<u>395,570</u>	<u>474,684</u>	<u>514,241</u>

Note: Fee rates are subject to change. Please be sure to use current fee rates for your calculations.

**PRELIMINARY BUDGET FORM (CONT.)**

**Part III-Expense Projections**

1. Salary Expenses:	Year 1	Year 2	Year 3
900 Full-Time Faculty Salaries*	_____	_____	_____
901 Part-Time Faculty Salaries	_____	_____	_____
902 Student Teaching Salaries	_____	_____	_____
903 Administrative Salaries*	_____	_____	_____
904 Administrative Suppl. Salaries	_____	_____	_____
905 Support Staff Salaries*	_____	_____	_____
906 Support Staff Suppl. Salaries	_____	_____	_____
908 Student Salaries	_____	_____	_____
<b>TOTAL SALARY EXPENSES</b>	-	-	-
2. Operating Expenses:			
910 Supplies	_____	_____	_____
911 Telecommunications Equipment	_____	_____	_____
912 Telecommunications Usage	_____	_____	_____
913 Equipment-Rental	_____	_____	_____
914 Postage and Mail Service	_____	_____	_____
915 Contracted Services	_____	_____	_____
916 Reproduction and Printing	_____	_____	_____
917 Books, periodicals, etc.	_____	_____	_____
918 Travel-Domestic	_____	_____	_____
919 Meeting Expenses	_____	_____	_____
920 Dues and Membership	_____	_____	_____
927 Honoraria	_____	_____	_____
929 Unclassified	_____	_____	_____
930 Moveable Capital Equipment	_____	_____	_____
931 Buildings & Grounds Services	_____	_____	_____
932 Computer Software and Databases	_____	_____	_____
934 Travel-Foreign	_____	_____	_____
953 Minor Equipment	_____	_____	_____
<b>TOTAL OPERATING EXPENSES</b>	-	-	-
4. Unit 16 Financial Aid :			
939 Tuition aid for two students	_____	_____	_____
	_____	_____	_____
<b>TOTAL EXPENSE</b>	-	-	-

5. Operating expenses already budgeted separately:

Name of Unit/Dept Providing support and description of expenses to be covered.

*024/205 Already covers all costs associated with program*

\* Complete Part IV for the 900,903, and 905 salary expenses. Amounts should be identical.

**PRELIMINARY BUDGET FORM (CONT.)**

**Part IV-Position and Salary Detail**

**I New Lines/Positions**

**900 Full-Time Faculty**

				<u>Salary Amounts Charged to Program</u>		
	<u>Name (or "open")</u>	<u>Rank</u>	<u>Unit/Dept</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____

**903 Full-Time Administrative Staff**

				<u>Salary Amounts Charged to Program</u>		
	<u>Name (or "open"), Title</u>		<u>Unit/Dept</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
1	_____		_____	_____	_____	_____
2	_____		_____	_____	_____	_____

**905 Full-Time Support Staff**

				<u>Salary Amounts Charged to Program</u>		
	<u>Name (or "open"), Title</u>		<u>Unit/Dept</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
1	_____		_____	_____	_____	_____
2	_____		_____	_____	_____	_____
3	_____		_____	_____	_____	_____
<b>Total New Lines/Positions:</b>				-	-	-

**II Existing Lines/Positions already budgeted separately (description only)**

**900 Full-Time Faculty**

	<u>Name (or "open")</u>	<u>Rank</u>	<u>Unit/Dept</u>
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____

**903 Full-Time Administrative Staff**

	<u>Name (or "open"), Title</u>	<u>Unit/Dept</u>
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____

**905 Full-Time Support Staff**

	<u>Name (or "open"), Title</u>	<u>Unit/Dept</u>
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____