

# Program Change Request

## New Program Proposal

Date Submitted: 09/17/18 9:48 am

### Viewing: **CERT-ENPM : Engineering Project Management - Certificate**

Last edit: 11/16/18 10:59 am

Changes proposed by: kbrumbelow

#### Contact(s)

Name	E-mail	Phone
Ivan Damnjanovic	idamnjanovic@civil.tamu.edu	979-862-6616
Kelly Brumbelow	kbrumbelow@tamu.edu	979-676-2114

Academic level	Graduate
Effective Term	2019-2020
Department	College of Engineering
College	Engineering
Program type	Certificate
Associated Program	Not Applicable
With a certificate in	Engineering Project Management

#### Catalog Program Title

Engineering Project Management - Certificate

CIP and Fund code 14010100

#### Rationale for Proposal

The "Engineering Project Management - Certificate" program within the College of Engineering at Texas A&M University is designed with an intention to help meet the requirements of industry by educating graduate engineering students to understand complex engineering projects, project organizations, and project management methods. The key educational objectives of this program are two fold: a) prepare graduate students to transition to workplace environment, and b) teach advanced project data analytics tools and methods.

Students with a graduate degree in engineering are typically hired into organizations that are highly project-driven. In such an environment, they need to know how organizations function, how to operate in a team environment, and address interpersonal challenges. However, for the most part they have no formal training and education in engineering project management. Therefore, this program creates an opportunity for engineering graduate students to understand how projects are organized and executed, with a goal of becoming more competitive in the job market.

Additionally, about five years into their careers, engineering graduates face a bifurcation point that branches into two career paths – a) managerial, or b) advanced technical. These paths directly match typical organizational structures. The first path leads to a career in project, program, and organizational management departments, while the second path leads to a career in functional (i.e., technical) departments. Hence, this program allows for advanced continuing education for the engineers who would like to explore project management careers.

Program hours	12
Is this program eligible for financial aid?	Yes
Certificate type	Stand-alone
Program delivery mode	On-campus

#### In Workflow

1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer GR
4. EN Committee Chair GR
5. EN College Dean GR
6. Provost
7. GC Preparer
8. GC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services

#### Approval Path

1. 09/17/18 2:31 pm  
Tim Jacobs (tjacobs): Approved for CLEN Department Head
2. 09/19/18 2:58 pm  
Angel Mario Carrizales (carri1214): Approved for Curricular Services Review
3. 10/02/18 5:10 pm  
Jennifer Veracruz (jveracruz): Approved for EN Committee Preparer GR
4. 11/11/18 11:10 pm  
Harry Hogan (h-hogan): Approved for EN Committee Chair GR
5. 11/11/18 11:19 pm  
Harry Hogan (h-hogan): Approved for EN College Dean GR
6. 11/14/18 6:39 pm  
Karen Butler-Purry (klbutler): Rollback to EN College Dean GR for Provost
7. 11/16/18 11:00 am  
Harry Hogan (h-hogan): Approved for EN College Dean GR
8. 11/16/18 1:28 pm  
Karen Butler-Purry (klbutler): Approved for Provost
9. 11/27/18 11:07 am  
LaRhesa Johnson (lrjohnson): Approved for GC Preparer

10. 12/13/18 4:22 pm  
 LaRhesa Johnson  
 (lrjohnson): Approved  
 for GC Chair

## Catalog Program Requirements

### Course List

Code	Title	Semester Credit Hours
<a href="#">ENGR 667</a>	Project Management for Engineers	3
Select three of the following:		9
<a href="#">BMEN 643</a>	Risk Based Development and Testing of Medical Devices	
<a href="#">CVEN 638</a>	Computer Integrated Construction Engineering Systems	
<a href="#">CVEN 644</a>	Project Risk Management	
<a href="#">CVEN 668</a>	Advanced EPC Project Development	
<a href="#">CVEN 710</a>	Civil Engineering Project Finance	
<a href="#">CVEN 717</a>	Engineering Project Control	
<a href="#">ENGR 684</a>	Professional Internship 1	
<a href="#">ENGR 685</a>	Directed Studies 1	
<a href="#">ISEN 613</a>	Engineering Data Analysis	
<a href="#">ISEN 630</a>	Human Operator in Complex Systems	
<a href="#">ISEN 641</a>	Systems Engineering Methods and Frameworks	
<a href="#">ISEN 667</a>	Engineering Economy	
<a href="#">PETE 622</a>	Exploration and Production Evaluation	
<a href="#">PETE 664</a>	Petroleum Project Evaluation and Management	
<a href="#">SENG 660</a>	Quantitative Risk Analysis	

Total Semester Credit Hours

12

**1 Use of [ENGR 684](#) and/or [ENGR 685](#) must be approved by the certificate program director.**

Additional Requirements

#### Additional information

Required Proposal Forms [Certificate\\_Programs\\_Form\\_Engineering\\_Project\\_Management\\_Certificate--SUBMISSION.docx](#)

Reviewer Comments  
**Angel Mario Carrizales (carri1214) (09/19/18 2:58 pm):** Edits made to conform to catalog style guidelines.  
**Mike Stephenson (mstephenson) (11/12/18 1:18 pm):** Assessment plan will be required. Please contact Institutional Effectiveness & Evaluation.  
**Karen Butler-Purry (klbutler) (11/14/18 6:39 pm):** Rollback: In the program type, you have stated "degree dependent". However on the New Program Request Form section II.D, there is a sentence which states "We will allow non degree seeking students to apply for the certificate.". This would mean the certificate is not degree dependent. This language is contradictory. Please revise appropriately.

Key: 920

# New Program Request Form for Certificate Programs

Directions: An institution shall use this form to propose a new bachelor's or master's degree program. In completing the form, the institution should refer to the document *Standards for Bachelor's and Master's Programs*, which prescribes specific requirements for new degree programs. Note: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval, and (3) if applicable, a member of the Board of Regents or (designee), certifying that criteria have been met for staff-level approval. NOTE: Preliminary authority is required for all engineering programs. An institution that does not have preliminary authority for a proposed engineering program shall submit a separate request for preliminary authority prior to submitting the degree program request form. That request shall address criteria set in Coordinating Board rules Section 5.24 (a).

## Administrative Information

1. Institution: **Texas A&M University**
2. Program Name – Show how the program would appear on the Coordinating Board's program inventory (e.g., *Bachelor of Business Administration degree with a major in Accounting*):  
**Engineering Project Management - Certificate**
3. Proposed CIP Code: **14.0101.00**
4. Brief Program Description – Describe the program and the educational objectives:  
The “**Engineering Project Management - Certificate**” program within the College of Engineering at Texas A&M University is designed with an intention to help meet the requirements of industry by educating graduate engineering students to understand complex engineering projects, project organizations, and project management methods. The key educational objectives of this program are two fold: a) prepare graduate students to transition to workplace environment, and b) teach advanced project data analytics tools and methods.  
  
Number of Semester Credit Hours Required: **12**
5. Administrative Unit – Identify where the program would fit within the organizational structure of the university (e.g., *The Department of Electrical Engineering within the College of Engineering*):  
**College of Engineering**
6. Proposed Implementation Date – Report the first semester and year that students would enter the program: **Fall 2019**
7. Contact Person – Provide contact information for the person who can answer specific questions about the program:

Name: Dr. Ivan Damnjanovic

Title: Associate Professor, Director of Engineering Project Management Education

E-mail: idamnjanovic@civil.tamu.edu

Phone: (979) 862-6616

## Program Information

### I. Need

*Note: Complete I.A and I.B only if preliminary authority for the program was granted more than four years ago. This includes programs for which the institution was granted broad preliminary authority for the discipline.*

- A. Job Market Need – Provide short- and long-term evidence of the need for graduates in the job market.

Not applicable, preliminary approval was not granted more than four years ago.

- B. Student Demand – Provide short- and long-term evidence of demand for the program.

Not applicable, preliminary approval was not granted more than four years ago.

- C. Enrollment Projections – Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. *(Include majors only and consider attrition and graduation.)*

YEAR	1	2	3	4	5
<b>Headcount</b>	5	10	15	20	25
<b>FTSE</b>	5	10	15	20	25

### II. Quality

- A. Certificate and Degree Requirements – Use this table to show the certificate and degree requirements of the program. *(Modify the table as needed; if necessary, replicate the table for more than one option.)*

Category	Semester Credit Hours
General Education Core Curriculum <i>(bachelor's degree only)</i>	--
Required Courses	3
Prescribed Electives	9
Free Electives	--
Other <i>(Specify, e.g., internships, clinical work)</i>	--
TOTAL	12

- B. Curriculum – Use these tables to identify the required courses and prescribed electives of the program, and curriculum as it will appear in the undergraduate and graduate catalog. Note with an asterisk (\*) courses that would be added if the program is approved. *(Add and delete rows as needed. If applicable, replicate the tables for different tracks/options as shown in the undergraduate catalog.)*

<b>Prefix and Number</b>	<b>Required Courses</b>	<b>SCH</b>
ENGR 667	Project Management for Engineers	3

<b>Prefix and Number</b>	<b>Prescribed Elective Courses</b> <i>(Select 9 SCH from...)</i>	<b>SCH</b>
BMEN 643	Risk Based Development and Testing of Medical Devices	3
CVEN 638	Computer Integrated Construction Engineering Systems	3
CVEN 644	Project Risk Management	3
CVEN 668	Advanced EPC Project Development	3
CVEN 710	Engineering Project Finance	3
CVEN 717	Engineering Project Controls	3
ENGR 684	Professional Internship (approval required)	1-3
ENGR 685	Directed Studies (approval required)	1-3
ISEN 613	Engineering Data Analysis	3
ISEN 630	Human Operator in Complex Systems	3
ISEN 641	Systems Engineering Methods and Frameworks	3
ISEN 667	Engineering Economy	3
PETE 622	Exploration and Production Evaluation	3
PETE 664	Petroleum Project Evaluation and Management	3
SENG 660	Quantitative Risk Analysis	3

<b>TOTAL SCH</b>		<b>12</b>
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- C. **Faculty** – Use these tables to provide information about **Core** and **Support** faculty. Add an asterisk (\*) before the name of the individual who will have direct administrative responsibilities for the program. *(Add and delete rows as needed.)*

<b>Name of <u>Core</u> Faculty and Faculty Rank</b>	<b>Highest Degree and Awarding Institution</b>	<b>Courses Assigned in Program</b>	<b>% Time Assigned To Program</b>
*Ivan Damnjanovic	PhD in Civil Engineering, University of Texas	CVEN 644, CVEN 710, ENGR 684, ENGR 685	10
John Walewski	PhD in Civil Engineering, University of Texas	CVEN 638, ENGR 684, ENGR 685	10
Ali Mostafavi	PhD in Civil Engineering, Purdue University	CVEN 668	5
Andy Johnson	PhD in Industrial Engineering, Georgia Tech	ISEN 667	5
Priscilla McLeroy	MS in Petroleum Engineering, Stanford University	PETE 622	5

<b>Name of <u>Support</u> Faculty and Faculty Rank</b>	<b>Highest Degree and Awarding Institution</b>	<b>Courses Assigned in Program</b>	<b>% Time Assigned To Program</b>
David Ford	PhD in Civil Engineering, MIT	CVEN 717	5
Satish T. Bukkapatnam	Ph.D. Industrial and Manufacturing Engineering, Pennsylvania State	ISEN 613	5
Thomas K. Ferris	PhD, Industrial and Operations Engineering, University of Michigan	ISEN 630	5
Lewis Ntaimo	Ph.D. Systems and Industrial Engineering, University of Arizona	ISEN 641	5
Nancy Gregg	Ph.D. in Industrial Engineering, University of Houston,	SENG/ISEN 660	5
James B. Maggard	PhD in Petroleum Engineering, Texas A&M University	PETE 664	5

- D. Students – Describe general recruitment efforts and admission requirements. How will students be accepted into the program? In accordance with the institution's Uniform Recruitment and Retention Strategy, describe plans to recruit, retain, and graduate students from underrepresented groups for the program.

Interested graduate students (ME, MS, and PhD) enrolled at the departments within the College of Engineering will contact the certificate program coordinator, and all students in good standing will be accepted. In addition, we will allow non-degree seeking students to apply for the certificate. The admission criterion for such applicants is a B.S. or higher degree (e.g. M.E, M.S.) in an engineering discipline.

We will aim to recruit from a diverse student body. To this aim, we will advertise the program through multiple channels including traditional College and Department websites as well as student and industry organizations such as Women in Engineering and ASCE, SPE, and others.

- E. Library – Provide the library director's assessment of library resources necessary for the program. Describe plans to build the library holdings to support the program.

The library needs for the program are standard and do not require special resources.

- F. Facilities and Equipment – Describe the availability and adequacy of facilities and equipment to support the program. Describe plans for facility and equipment improvements/additions.

The existing facilities and equipment of the College of Engineering meet the needs for the program.

- G. Accreditation – If the discipline has a national accrediting body, describe plans to obtain accreditation or provide a rationale for not pursuing accreditation.

No national accreditation body exists for engineering project management.

- H. Evaluation – Describe the evaluation process that will be used to assess the quality and effectiveness of the new degree program.

An Advisory and Evaluation Committee will be formed and consist of representatives from each of the departments in the College of Engineering as well the representatives from the Engineering (Industry) Advisory Council. The College of Engineering will also develop an appropriate annual review process to evaluate the impact of Certificate in Engineering Project Management program. The review will include evaluations from graduate recruitment, retention, curriculum, and faculty teaching assessments.

I. Administration of Program – Describe how the program will be administered.  
 Where will the program be administered (i.e., department, college)?

The program will be administered by the College of Engineering and a dedicated Director of Engineering Project Management Education (currently Dr. Ivan Damnjanovic).

III. **Costs and Funding**

Five-Year Costs and Funding Sources - Use this table to show five-year costs and sources of funding for the program.

No additional costs will be incurred for this certificate program. All courses and needed resources already exist on-campus. It is anticipated that enrollment will consist of engineering graduate students primarily pursuing other degree programs, and new revenues will not be generated solely attributable to this program.

<b>Five-Year Costs</b>		<b>Five-Year Funding</b>	
Personnel <sup>1</sup>	\$0	Funds from Graduate and DL fees	\$0
Facilities and Equipment	\$0	Anticipated New Formula Funding <sup>3</sup>	\$0
Library, Supplies, and Materials	\$0	Special Item Funding	\$0
Other <sup>2</sup>	\$0	Other <sup>4</sup>	\$0
<b>Total Costs</b>	<b>\$0</b>	<b>Total Funding</b>	<b>\$0</b>

1. Report costs for new faculty hires, graduate assistants, and technical support personnel. For new faculty, prorate individual salaries as a percentage of the time assigned to the program. If existing faculty will contribute to program, include costs necessary to maintain existing programs (e.g., cost of adjunct to cover courses previously taught by faculty who would teach in new program).
2. Specify other costs here (e.g., administrative costs, travel).
3. Indicate formula funding for students new to the institution because of the program; formula funding should be included only for years three through five of the program and should reflect enrollment projections for years three through five.
4. Report other sources of funding here. In-hand grants, "likely" future grants, and designated tuition and fees can be included.



## Signature Page

1. Adequacy of Funding – The chief executive officer shall sign the following statement:

*I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.*

\_\_\_\_\_  
Chief Executive Officer

\_\_\_\_\_  
Date

2. Board of Regents or Designee Approval – A member of the Board of Regents or designee shall sign the following statement:

*On behalf of the Board of Regents, I approve the program.*

\_\_\_\_\_  
Board of Regents (Designee)

\_\_\_\_\_  
Date of Approval

3. Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

- (1) be within the institution's current Table of Programs;
- (2) have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
- (3) have sufficient clinical or in-service sites, if applicable, to support the program;
- (4) be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
- (5) attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
- (6) not unnecessarily duplicate existing programs at other institutions;
- (7) not be dependent on future Special Item funding
- (8) have new five-year costs that would not exceed \$2 million.

*On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b).*

\_\_\_\_\_  
Board of Regents (Designee)

\_\_\_\_\_  
Date