

The completed and signed proposal should be submitted by the Dean's Office to: curriculumplanning@asu.edu.

Before academic units can advertise undergraduate concentrations or include them in their offerings as described in the university catalogs, they must be recommended for approval by the Senate Curriculum and Academic Programs Committee and approved by the Executive Vice President and Provost of the University.

Definition and minimum requirements:

A concentration is a formalized selection of courses within a major.

- A concentration requires a minimum of 15 semester hours of which at least 9 semester hours must be upper division. Specialized concentrations (e.g., BIS Concentrations) may have additional or different requirements.
- A concentration is offered by a single unit and is intended exclusively for students pursuing a particular major. If a concentration consists of courses from more than one college the approval of each college Dean is required.

College/School/Institute: College of Technology and Innovation

Department/Division/School: Engineering

Proposing Faculty Group (if applicable):

If this is an official joint degree program? No

If "Yes" List all the additional college(s)/school(s)/institute(s) that will be involved in offering the degree program and providing the necessary resources. Note: All units offering this program must have collaborated in the proposal development and completed the appropriate unit and college/school approvals. N/A

Existing degree type and name of degree program under which this concentration will be established: BSE Engineering

Proposed Concentration Name: Automotive Systems

Requested effective catalog year? Fall 2014

For deadline dates see: [Curriculum Workflow Calendars](#).

Delivery method: On-campus only (ground courses and/or iCourses)

Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and [Philip Regier](#) (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

Campus/Locations:

Indicate all locations where this program will be offered.

Downtown Phoenix Polytechnic Tempe West Other:

Proposal Contact

Name: Dr. Ann McKenna **Title:** Engineering Department Chair
Phone number: 7-5121 **Email:** Ann.McKenna@asu.edu

DEAN APPROVAL(S)

This proposal has been approved by all necessary unit and College/School levels of review. I recommend implementation of the proposed program

College/School/Division Dean name: Please see email approval in support file.

Signature _____ **Date:** 9/11 /2013

College/School/Division Dean name: (if more than one college involved): _____

Signature _____ **Date:** / /20

Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.

1. Overview

A. Description

Provide a brief description of the new concentration (including the specific focus of the new concentration, relationship to other concentrations in this degree program, etc).

The BSE Engineering program within the Department of Engineering at the Polytechnic campus is a multidisciplinary engineering program with concentrations in mechanical systems, electrical systems, and robotics (effective Fall 2013); students take concentration or emphasis area courses in their junior and senior years. The program allows students to learn in a problem-based curriculum with hands-on projects and the development of applied industry skills integrated into the program. For this concentration, in the junior and senior years, students will take courses in automotive systems and mechanical and electrical engineering topics. The automotive concentration addresses vehicle design via a focus on automotive engineering fundamentals, including powertrain engineering and chassis system design, as well as hand-on projects that involve designing, analyzing, and building of actual automotive systems. The graduate with an automotive systems concentration will be able to provide leadership in automotive engineering settings, especially automotive testing and hybrid propulsion systems, which are intrinsically multi-disciplinary in nature.

B. Demand

Explain the unit's need for the new concentration (e.g., market demand, research base, direction of the discipline, and interdisciplinary considerations). How will the new concentration complement the existing degree program?

The proposed automotive systems concentration converts the automotive concentration in the Mechanical Engineering Technology program, which is being disestablished, to an automotive concentration within the BSE program. The MET automotive concentration, first established in 2009, has consistently attracted a growing number of students. Enrollment in MET 321, which is a core automotive course, has increased from 28 (Fall 2010) and 29 (Fall 2011) to 50 (Fall 2012). Students' interest in automotive engineering is expected to continue to grow through the merger of the MET programs into the BSE program. An automotive concentration is a natural complement to the existing mechanical and electrical concentrations of the BSE as automotive systems are a specialized content area within these more general engineering fields.

2. Support and Impact

A. Faculty governance

Provide a supporting letter from the chair of the academic unit verifying that the proposed concentration has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the concentration as presented in the proposal, without impacting core course resources.

B. Other related programs

Identify other related ASU programs and outline how the new concentration will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

Only the CTI housed BS in Mechanical Engineering Technology (Automotive) program, which is being disestablished, focused on the unique interdisciplinary needs of Automotive Engineering. However, the Fulton School of Engineering has been asked for comments regarding this proposal.

C. Letter(s) of support

Provide a supporting letter from each college/school dean from which individual courses, or the entire concentration, are taken.

3. Academic Curriculum and Requirements

A. Knowledge, competencies, and skills

List the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed concentration. Examples of program learning outcomes can be found at (<http://www.asu.edu/oue/assessment.html>).

In addition to the BSE Engineering program student outcomes (Technical Competence, Design, Engineering Practice, Problem Solving, Professionalism, Communication, Perspective, Critical Thinking and Decision Making, Teamwork), students will achieve the following outcomes:

- Students will demonstrate a working knowledge of the following automotive systems: powertrains, vehicle performance, chassis design, and electrical.
- Students will be able to specify automotive systems & subsystems, architectures and their interactions to meet a specified vehicle performance.
- Students will apply current knowledge and creativity in the design of systems, components, and processes, and will be able to adapt to emerging applications of mathematics, science, engineering, and technology.
- Students will apply physical and material constraints to the design of mechanical and electrical automotive systems and components and will be able to apply mechanical analysis techniques to verify designs.
- Students will demonstrate ability to use problem-solving technologies and program management skills that are essential in the automotive industry.

B. Admissions criteria

List the admissions criteria for the proposed concentration. If they are identical to the admission criteria for the existing major and degree program under which this concentration will be established, please note that here.

Admission criteria mirrors that of the existing major and degree.

C. Curricular structure

Provide the curricular structure for this concentration. Be specific in listing required courses and specify the total minimum number of hours required for the concentration.

Required Core Courses for the Degree/Major

Engineering Core (note: additional required supporting courses that concurrently satisfy general studies are noted on the major map).

Prefix	Number	Title	Is this a new Course?	Credit Hours
EGR	101	Foundations of Engineering Design Project I	No	3
EGR	102	Foundations of Engineering Design Project II	No	3
EGR	104	Critical Inquiry in Engineering	No	3
EGR	201	Use-Inspired Design Project I	No	3
EGR	202	Use-Inspired Design Project II	No	3
EGR	216	Engineering Electrical Fundamentals	No	3
EGR	217	Engineering Mechanical Fundamentals	No	3
EGR	218	Materials and Manufacturing Processes	No	3
EGR	219	Computational Modeling of Engineering Systems	No	3
EGR	280	Engineering Statistics	No	3

Section sub-total: 30

Required Concentration Courses

Prefix	Number	Title	Is this a new Course?	Credit Hours
EGR	306	Automotive Systems Project I	No	3
EGR	316	Automotive Systems Project II	No	3
EGR	340	Engineering Thermo-Fluids I	No	3
EGR	330 OR 432	Design of Electrical Systems OR Engineering Thermo-Fluids II	No	3
EGR	363	Automotive Powertrains & Thermal Systems	Yes	3
EGR	463	Vehicle Electrical Systems & Hybrid Systems	Yes	3
EGR	465	Ground Vehicle Dynamics	Yes	3
PHY	321	Vector Mechanics and Vibration	No	3
<i>Section sub-total:</i>				24

Elective Concentration Courses

Prefix	Number	Title	Is this a new Course?	Credit Hours
none				
<i>Section sub-total:</i>				0

Other Concentration Requirements

E.g. – Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable				Credit Hours
EGR	401	Professional Design Project I	N	3
EGR	402	Professional Design Project II	N	3
<i>Section sub-total:</i>				6

Total minimum credit hours required for concentration **60***
*conc.+degree core

Academic Curriculum and Requirements (Continued)

D. Minimum residency requirement

How many hours of the concentration must be ASU credit?

The minimum residency requirement of the concentration is 15 credits; EGR 306 and 316 must be taken at ASU.

E. Provide a brief course description for each new course.

EGR 363 Automotive Powertrains & Thermal Systems (3)

Internal Combustion Engine (ICE) design in the context of automotive systems, and heat management in vehicle systems, including thermal design of engine and transmission cooling systems. Operating characteristics and efficiencies of the ICE, terminology and abbreviations used in the Automotive Industry, contemporary fuels and the latest Hybrid technology, CAFE standards and EPA vehicle emissions standards, lubrication systems and fluids appropriate for a given design, and current and future standards requirements. **Prerequisites:** EGR 340 Engineering Thermo Fluid I.

EGR 463 Vehicle Electrical Systems & Hybrid Systems (3)

Basic theory and operation of hybrid electric drive systems of motor vehicles. Covers fundamentals of next generation electrification including: batteries technology, charging, power electronic operation. Emphasize principals of HEV energy management strategies and HEV modeling fundamentals. *Prerequisites:* EGR 216 (or EGR 294 Engineering Fundamentals I) and 363 (or EGR 394 Intro to Concepts in Automotive Engineering or MET 321)

EGR 465 Ground Vehicle Dynamics (3)

Basic understanding of vehicle dynamics principles and a sufficient knowledge to analyze vehicle dynamic performance and associated chassis system design concepts. Understanding of various dynamical equations of motion governing vehicle behavior as well as computer simulation. *Prerequisites:* EGR 363 (or EGR 394 Intro to Concepts in Automotive Engineering or MET 321)

Note: All new required courses should be submitted in Curriculum Changemaker and ready for Provost’s Office approval before this concentration is put on [Curriculum and Academic Programs Committee \(CAPC\)](#) agenda.

4. Administration and Resources

A. How will the proposed concentration be administered (including admissions, student advisement, retention, etc.)?

The concentration will be administered through the current structure and process for in place for the existing BSE focus areas, major and degree.

B. What are enrollment projections for the next three years?

	1st Year	2nd Year (Yr. 1 continuing + new entering)	3rd Year (Yr. 1 & 2 continuing + new entering)
Number of Students (Headcount)	50	100	150

C. Resources

What are the resource implications for the proposed concentration, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this concentration please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this concentration.

No additional resources are required.

D. Primary Faculty

List the primary faculty participants regarding this proposed concentration. For interdisciplinary concentrations, please include the relevant names of faculty members from across the University.

Name	Title	Area(s) of Specialization as they relate to proposed concentration
Mr. James Contes	Senior Lecturer	automotive engineering, mechanical engineering
Dr. Abdel Mayyas	Assistant Professor	mechanical engineering, automotive engineering
Dr. Chen-Yuan Kuo	Associate Professor	mechanical engineering and controls
Dr. John Robertson	Full Professor	electrical engineering
Dr. Pavlos Mikelides	Associate Professor	mechanical engineering, thermodynamics
Dr. Changho Nam	Associate Professor	mechanical engineering, aerospace engineering
Dr. John Rajadas	Associate Professor	mechanical engineering, thermodynamics
Dr. Sangram Redkar, ,	Assistant Professor	mechanical engineering, dynamics, controls
Dr. Bradley Rogers	Associate Professor	mechanical engineering, thermodynamics
Dr. Thomas Sugar,	Associate Professor	mechanical engineering, robotics, controls, design
Dr. Narciso Macia	Associate Professor	electrical engineering, control system

5. Additional Materials

A. Major Map

Attach a copy of the “proposed” major map for this degree program and each concentration(s) to be offered. Instructions on how to create a “proposed major map” in [BAMM](#) can be found in the [Build a Major Map Training Guide](#).

B. Appendix

Complete and attach the Appendix document.

C. Attach other information that will be useful to the review committees and the Office of the Provost.


**2014 - 2015 Major Map
Engineering (Automotive Systems), BSE (Proposed)**

Term 1 0 - 14 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
CHM 113: General Chemistry I (SQ)	4		<ul style="list-style-type: none"> • An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses • ASU Math Placement Exam score determines placement in Mathematics course • ASU 101 or College specific equivalent First Year Seminar required of all freshman students • CTI 101 required of all freshman students
CTI 101: Success in Technology & Innovation	1		
EGR 101: Foundations of Engineering Design Project I	3		
MAT 265: Calculus for Engineers I (MA)	3	C	
ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition	3	C	
Term hours subtotal:	14		
Term 2 15 - 29 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
EGR 102: Foundations of Engineering Design Project II	3		
MAT 266: Calculus for Engineers II (MA)	3	C	
PHY 121: University Physics I: Mechanics (SQ)	3		
EGR 104: Critical Inquiry in Engineering (L)	3		
ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition	3	C	
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	15		
Term 3 30 - 44 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
EGR 201: Use-Inspired Design Project I	3		
EGR 216: Engineering Electrical Fundamentals	3		
EGR 218: Materials and Manufacturing Processes	3		
MAT 267: Calculus for Engineers III (MA)	3	C	
EGR 280: Engineering Statistics (CS)	3		
Term hours subtotal:	15		
Term 4 45 - 59 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
EGR 202: Use-Inspired Design Project II	3		
EGR 217: Engineering Mechanics Fundamentals	3		
EGR 219: Computational Modeling of Engineering Systems	3		
Humanities, Fine Arts and Design (HU)	3		
MAT 275: Modern Differential Equations (MA)	3		
Term hours subtotal:	15		
Term 5 60 - 75 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
EGR 306: Automotive Systems Project I	3		
EGR 340: Engineering Thermo-Fluids I	3		
HST 318: History of Engineering ((L or SB) & G)	3		
Science Elective AND Natural Science - Quantitative (SQ)	4		
Secondary Focus Area			

3
Term hours subtotal: 16

Term 6 76 - 90 Credit Hours Necessary course signified by			
	Hours	Minimum Grade	Notes
EGR 316: Automotive Systems Project II	3		
EGR 363: Automotive Powertrains and Thermal Systems	3		
MAT 343: Applied Linear Algebra	3		
Secondary Focus Area	3		
Social and Behavioral Sciences (SB)	3		
Term hours subtotal:		15	

Term 7 91 - 105 Credit Hours Necessary course signified by			
	Hours	Minimum Grade	Notes
EGR 330: Design of Electrical Systems OR EGR 432: Engineering Thermo-Fluids II	3		
EGR 401: Professional Design Project I (L)	3		
PHY 321: Vector Mechanics and Vibration	3		
Upper Division Secondary Focus Area	3		
Humanities, Fine Arts and Design (HU) AND Historical Awareness (H)	3		
Term hours subtotal:		15	

Term 8 106 - 120 Credit Hours Necessary course signified by			
	Hours	Minimum Grade	Notes
EGR 402: Professional Design Project II	3		
EGR 463: Vehicle Electrical Systems & Hybrid Systems	3		
EGR 465: Ground Vehicle Dynamics	3		
Upper Division Secondary Focus Area	3		
Upper Division Social and Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C) OR Upper Division Humanities, Fine Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
Term hours subtotal:		15	

- Students must select 4 hours of Science Elective from the listed courses.
- A secondary focus area is a group of courses comprising of 12 or more credit hours which form a coherent theme. For example, all courses may share a common subject prefix. Students work with an academic success specialist to identify their secondary focus area.

Science Elective

- BIO 181: General Biology I (SQ)
- CHM 116: General Chemistry II (SQ)
- GLG 101: Introduction to Geology I (Physical) (SQ)
- GLG 103: Introduction to Geology I-Laboratory (SQ)
- PHY 122: University Physics Laboratory I (SQ)
- PHY 131: University Physics II: Electricity and Magnetism (SQ)
- PHY 132: University Physics Laboratory II (SQ)

Total Hours: 120
Upper Division Hours: 45 minimum
Major GPA: 2.00 minimum
Cumulative GPA: 2.00 minimum
Total hrs at ASU: 30 minimum
Hrs Resident Credit for Academic Recognition: 56 minimum
Total Community College Hrs: 64 maximum

General University Requirements Legend

General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Fine Arts and Design (HU)
- Social and Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
 - Global Awareness (G)
 - Historical Awareness (H)
- First-Year Composition

General Studies designations listed on the major map are current for the 2014 - 2015 academic year.

APPENDIX
OPERATIONAL INFORMATION FOR UNDERGRADUATE CONCENTRATIONS

(This information is used to populate the [Degree Search/catalog website](#).

Please consider the student audience in creating your text.)

1. Proposed Concentration Name: Engineering (Automotive Systems)

2. Program Description (150 words maximum)

The BSE in engineering within the Department of Engineering at the Polytechnic campus is a multidisciplinary engineering program with concentrations in automotive systems, mechanical systems, electrical systems and robotics. Students take concentration or emphasis-area courses in their junior and senior years. The program allows students to learn in a problem-focused curriculum with hands-on projects. Additionally, the development of applied industry skills is integrated into the program. The automotive concentration addresses vehicle design. In the junior and senior years, students will take courses in automotive systems and mechanical and electrical engineering topics. The curriculum focuses on automotive engineering fundamentals, including powertrain engineering and chassis system design, as well as hands-on projects that involve designing, analyzing and building of actual automotive systems. The bachelor's graduate with an automotive systems concentration will be able to provide leadership in automotive engineering settings, especially automotive testing and hybrid propulsion systems, which are intrinsically multidisciplinary in nature.

3. Contact and Support Information

Building Name, code and room number: (<i>Search ASU map</i>)	TECH 101
Program office telephone number: (<i>i.e. 480/965-2100</i>)	480/727-1874
Program Email Address:	egr@asu.edu
Program Website Address:	https://technology.asu.edu/egr

4. Delivery/Campus Information Delivery: On campus

Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

5. Campus/Locations: indicate all locations where this program will be offered.

Downtown Phoenix Polytechnic Tempe West Other:

6. Additional Program Description Information

A. Additional program fee required for this program? No (CTI has Differential Tuition)

B. Does this program have a second language requirement? No

7. Career Opportunities & Concentrations

Provide a brief description of career opportunities available for this degree program. If program will have concentrations, provide a brief description for each concentration. (150 words maximum)

Graduates from the automotive concentration are prepared for employment in automotive-related companies, from large original equipment manufacturers (OEM) companies and their testing grounds to smaller specialty or aftermarket companies. Since this is a concentration in the BSE in engineering program, graduates also will have opportunities to perform functions that have traditionally been done by mechanical, manufacturing, automation and development engineers.

8. Additional Admission Requirements

If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.) None

9. Keywords

List all keywords used to search for this program. Keywords should be specific to the proposed program.

Engineering, Automotive Engineering, ground vehicles, hybrid, cars, power trains, design, Manufacturing, Mechanical Engineering

10. Advising Committee Code

List the existing advising committee code to be associated with this degree. UGTIGA

Note: If a new advising committee needs to be created, please complete the following form:

[Proposal to create an undergraduate advising committee](#)

First Required Math Course

List the first math course required in the major map. MAT 265 is the first required MAT course.

11. Western Undergraduate Exchange (WUE) Eligible:

Has a request been submitted to the Provost by the Dean to consider this degree program as eligible for WUE?

Yes, the BSE program is already approved for WUE so we assume this concentration will be as well.

Note: No action will be taken during the implementation process with regards to WUE until approval is received from the Provost.

12. Area(s) of Interest

A. Select **one (1)** primary Area of Interest from the list below that applies to this program.

- | | |
|--|---|
| <input type="checkbox"/> <u>Architecture, Construction & Design</u> | <input checked="" type="checkbox"/> <u>Engineering & Technology</u> |
| <input type="checkbox"/> <u>Artistic Expression & Performance</u> | <input type="checkbox"/> <u>Environmental Issues & Physical Science</u> |
| <input type="checkbox"/> <u>Biological Sciences, Health & Wellness</u> | <input type="checkbox"/> <u>Interdisciplinary Studies</u> |
| <input type="checkbox"/> <u>Business, Management & Economics</u> | <input type="checkbox"/> <u>Languages & Cultures</u> |
| <input type="checkbox"/> <u>Communication & Media</u> | <input type="checkbox"/> <u>Law & Justice</u> |
| <input type="checkbox"/> <u>Computing & Mathematics</u> | <input type="checkbox"/> <u>Social Science, Policies & Issues</u> |
| <input type="checkbox"/> <u>Education & Teaching</u> | |

B. Select **any** additional Areas of Interest that apply to this program from the list below.

- | | |
|--|---|
| <input type="checkbox"/> <u>Architecture, Construction & Design</u> | <input type="checkbox"/> <u>Engineering & Technology</u> |
| <input type="checkbox"/> <u>Artistic Expression & Performance</u> | <input type="checkbox"/> <u>Environmental Issues & Physical Science</u> |
| <input type="checkbox"/> <u>Biological Sciences, Health & Wellness</u> | <input type="checkbox"/> <u>Interdisciplinary Studies</u> |
| <input type="checkbox"/> <u>Business, Management & Economics</u> | <input type="checkbox"/> <u>Languages & Cultures</u> |
| <input type="checkbox"/> <u>Communication & Media</u> | <input type="checkbox"/> <u>Law & Justice</u> |
| <input checked="" type="checkbox"/> <u>Computing & Mathematics</u> | <input type="checkbox"/> <u>Social Science, Policies & Issues</u> |
| <input type="checkbox"/> <u>Education & Teaching</u> | |

The following fields are to be completed by the Office of the Executive Vice President and Provost of the University.

CIP Code: _____

Plan Code: _____

From: [Ann McKenna](#)
To: [Scott Danielson](#)
Subject: Re: Approval of the Automotive Engineering Concentration Proposal
Date: Tuesday, September 10, 2013 8:57:58 PM

Dear Dr. Danielson,

I approve the proposal for a new concentration in Automotive Systems within the BSE degree program.

Regards,

Ann

--

Ann F. McKenna, Ph.D.
Professor and Chair, Department of Engineering & Computing Systems
College of Technology and Innovation
Arizona State University
7171 E Sonoran Arroyo Mall
Peralta 330B
Mesa, AZ 85212
Phone: 480-727-5121
ann.mckenna@asu.edu

From: Scott Danielson <Scott.Danielson@asu.edu>
Date: Tuesday, September 10, 2013 8:41 PM
To: Ann McKenna <ann.mckenna@asu.edu>
Subject: Approval of the Automotive Engineering Concentration Proposal

Dear Dr. McKenna,

Via a positive response to this email, please indicate your approval of the attached proposal for a new concentration in Automotive Engineering within the BSE in Engineering degree. This will also serve as the supporting letter from the chair of the academic unit verifying that the proposed concentration has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the concentration as presented in the proposal, without impacting core course resources.

Thank you.

Scott Danielson, Ph.D., P.E.
Associate Dean for Academic Programs
College of Technology and Innovation
Arizona State University
480-727-1185

From: [Mitzi Montoya](#)
To: [Scott Danielson](#)
Subject: Re: Approval of the Automotive Engineering Concentration Proposal
Date: Tuesday, September 10, 2013 8:54:16 PM

Approved.

Mitzi M. Montoya
Arizona State University
Sent from my DROID

Scott Danielson <Scott.Danielson@asu.edu> wrote:

Dean Montoya,

I am asking for your approval on the attached proposal for a new concentration in Automotive Engineering within the BSE in Engineering degree to be offered in the College of Technology and Innovation at the Polytechnic campus. Your approval is needed before I can send the proposal forward to the Provost's office.

Your approval indicates that the proposal has been approved by the Department and College levels of review and the College has the resources to offer this degree program. Thus, you recommend implementation of the proposed degree program.

Thank you.

Scott Danielson, Ph.D., P.E.
Associate Dean for Academic Programs
College of Technology and Innovation
Arizona State University
480-727-1185

Scott Danielson, Ph.D., P.E.
Associate Dean for Academic Programs
College of Technology and Innovation
Arizona State University
480-727-1185

From: [James Collofello](#)
To: [Scott Danielson](#)
Cc: [Kyle Squires](#); [Valana Wells](#); [Ann McKenna](#)
Subject: RE: Automotive Concentration to the BSE in Engineering at Poly
Date: Friday, September 20, 2013 11:09:03 AM

Scott,

The Fulton Schools of Engineering does not have any objections to the development of the Automotive Concentration within your BSE degree. Since our mechanical engineering program also produces graduates for the automotive industry we hope to continue to work with you on communications and recruitment materials to guide future Sun Devil engineers into the program that best meets their career goals.

jim

James S. Collofello
Associate Dean of Academic and Student Affairs
Professor of Computer Science and Engineering
School of Computing Informatics and Decision Systems Engineering
Ira A. Fulton Schools of Engineering
Arizona State University

From: Scott Danielson
Sent: Wednesday, September 11, 2013 9:34 AM
To: James Collofello
Subject: Automotive Concentration to the BSE in Engineering at Poly

Jim,

As part of the proposal submission process, I am asking for Fulton School of Engineering comment on the CTI proposal for an Automotive Concentration to the BSE in Engineering at Poly. This concentration was approved on last year's Academic Plan and we are now getting ready to submit the proposal.

I have provided the basic information below about the proposal. As you can see, it is based on the existing automotive concentration in the old Mechanical Engineering Technology program.

Please let me know your thoughts or if you have questions. Thanks.

Scott

1. Overview

A. Description

Provide a brief description of the new concentration (including the specific focus of the new concentration, relationship to other concentrations in this degree program, etc.).

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multidisciplinary engineering program with concentrations in mechanical systems, electrical systems, and robotics (effective Fall 2013); students take concentration or emphasis area courses in their junior and senior years. The program allows students to learn in a problem-based curriculum with hands-on projects and the development of applied industry skills integrated into the program. For this concentration, in the junior and senior years, students will take courses in automotive systems and mechanical and electrical engineering topics. The automotive concentration addresses vehicle design via a focus on automotive engineering fundamentals, including powertrain engineering and chassis system design, as well as hand-on projects that involve designing, analyzing, and building of actual automotive systems. The graduate with an automotive systems concentration will be able to provide leadership in automotive engineering settings, especially automotive testing and hybrid propulsion systems, which are intrinsically multi-disciplinary in nature.

B. Demand

Explain the unit's need for the new concentration (e.g., market demand, research base, direction of the discipline, and interdisciplinary considerations). How will the new concentration complement the existing degree program?

The proposed automotive systems concentration converts the automotive concentration in the Mechanical Engineering Technology program, which is being disestablished, to an automotive concentration within the BSE program. The MET automotive concentration, first established in 2009, has consistently attracted a growing number of students. Enrollment in MET 321, which is a core automotive course, has increased from 28 (Fall 2010) and 29 (Fall 2011) to 50 (Fall 2012). Students' interest in automotive engineering is expected to continue to grow through the merger of the MET programs into the BSE program. An automotive concentration is a natural complement to the existing mechanical and electrical concentrations of the BSE as automotive systems are a specialized content area within these more general engineering fields.

Scott Danielson, Ph.D., P.E.
Associate Dean for Academic Programs
College of Technology and Innovation
Arizona State University
480-727-1185

From: Scott Danielson
To: [James Collofello](#)
Subject: Automotive Concentration to the BSE in Engineering at Poly
Date: Wednesday, September 11, 2013 9:34:00 AM

Jim,

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A. Description

Provide a brief description of the new concentration (including the specific focus of the new concentration, relationship to other concentrations in this degree program, etc.).

The BSE Engineering program within the Department of Engineering at the Polytechnic campus is a multidisciplinary engineering program with concentrations in mechanical systems, electrical systems, and robotics (effective Fall 2013); students take concentration or emphasis area courses in their junior and senior years. The program allows students to learn in a problem-based curriculum with hands-on projects and the development of applied industry skills integrated into the program. For this concentration, in the junior and senior years, students will take courses in automotive systems and mechanical and electrical engineering topics. The automotive concentration addresses vehicle design via a focus on automotive engineering fundamentals, including powertrain engineering and chassis system design, as well as hand-on projects that involve designing, analyzing, and building of actual automotive systems. The graduate with an automotive systems concentration will be able to provide leadership in automotive engineering settings, especially automotive testing and hybrid propulsion systems, which are intrinsically multi-disciplinary in nature.

B. Demand

Explain the unit's need for the new concentration (e.g., market demand, research base, direction of the discipline, and interdisciplinary considerations). How will the new concentration complement the existing degree program?

The proposed automotive systems concentration converts the automotive concentration in the Mechanical Engineering Technology program, which is being disestablished, to an automotive concentration within the BSE program. The MET automotive concentration, first established in 2009, has consistently attracted a growing number of students. Enrollment in MET 321, which is a core automotive course, has increased from 28 (Fall 2010) and 29 (Fall 2011) to 50 (Fall 2012). Students' interest in automotive engineering is expected to continue to grow through the merger of the MET programs into the BSE program. An automotive concentration is a natural complement to the existing mechanical and electrical concentrations of the BSE as automotive systems are a specialized content area within these more general engineering fields.