

This form should be used for academic units wishing to propose a new concentration for existing graduate degrees.

A concentration is a subspecialty within a degree and major. It indicates the fulfillment of a designated, specialized course of study, which qualifies the student with skills and training in one highly concentrated area of the major. Concentrations are formally-recognized educational designations (including the assignment of a university plan code for reporting/record-keeping purposes and appearance on the ASU transcript). Concentrations are distinguished from more informal academic distinctions such as “emphases,” “tracks,” “foci,” “options,” etc.

This proposal template should be completed in full and submitted to the University Provost’s Office [mail to: curriculumplanning@asu.edu]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost’s Office notifies the academic unit that the program may be offered.

**GRADUATE CONCENTRATION**

<b>College/School:</b>	Ira A. Fulton Schools of Engineering
<i>Note: Program ownership is coded at the College/School level first and may not be a center, department or division apart from it.</i>	
<b>Department/Division/School:</b>	The Polytechnic School [CAPPSYCH - Human Systems Engineering]
<b>Proposing faculty group (if applicable):</b>	Human Systems Engineering

<b>Existing graduate degree and major under which this concentration will be established:</b>	Master of Science (MS) in Human Systems Engineering
<b>Name of proposed concentration:</b>	Aviation Human Factors
<b>Requested effective term and year:</b> Fall	2021
<i>(The first semester and year for which students may begin applying to the concentration)</i>	
<b>Is a program fee required?</b>	No, a program fee is not required.

*Note: for more information about program fee requests, visit <https://provost.asu.edu/curriculum-development/changemaker/form-instructions#fees>*

Is the unit willing and able to implement the program if the fee is denied?	Not applicable.
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**Delivery method and campus or location options:** *select all locations that apply*

- Downtown Phoenix     Polytechnic     Tempe     West     Other: \_\_\_\_\_
- Both** on-campus **and**  ASU Online\* - (check applicable campus(es) from options listed above)
- ASU Online only (all courses online and managed by ASU Online)

*Note: Once students elect a campus or Online option, students will not be able to move between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online. Please complete the ASU Online Offering form in Curriculum ChangeMaker to begin this request. Prior to completing the online Curriculum ChangeMaker form, please contact EdPlus at [asuonline@asu.edu](mailto:asuonline@asu.edu) who can provide you with additional information regarding the online request process.*

<b>Do Not Fill in this information: Office Use Only</b>	
<b>Plan Code:</b>	<b>CIP Code:</b>

**PROPOSAL CONTACT**

<b>Name:</b>	Nancy Cooke	<b>Title:</b>	Professor
<b>Phone number:</b>	480-727-5158	<b>Email:</b>	ncooke@asu.edu

**DEAN APPROVAL(S)**

This proposal has been approved by all necessary unit and college/school levels of review, and the college/school(s) has the resources to offer this degree program. I recommend implementation of the proposed concentration.

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

**College/School/Division Dean name:** James S. Collofello

**Signature:** 

**Date:** 9/23/2020

**Please note:** Proposals for new concentrations also require the review and recommendation of approval from the University Graduate Council, Curriculum and Academic Programs Committee (CAPC), the Academic Senate (Information item only), and the Office of the Provost before they can be put into operation.

**The final approval notification will come from the Office of the Provost.**

**1. OVERVIEW**

Provide a brief description (*no more than 150 words*) of the new concentration (including the focus of the new concentration, relationship to other concentrations within this degree program, etc.).

The MS program in Human Systems Engineering with a concentration in Aviation Human Factors provides students with a deep understanding of the science of human performance and experience in the aerospace and aviation industries. This understanding will provide students with the ability to address human systems engineering problems that occur in the aerospace and aviation domains and with the ability to do use-inspired research on multidisciplinary teams. The multidisciplinary conduct of use-inspired research is aligned with ASU's mission.

Students in this program will participate in courses focusing on methods and tools in applied cognitive science, foundations of human systems engineering, uses of simulation, aviation physiology, and crew resource management among other areas of study. The four foundational courses are the same foundational courses required for the MS in Human Systems Engineering. The concentration adds two required courses and electives that are specific to the intersection of human systems engineering and aviation. The understanding of cognitive science and human systems concepts and tools will enable students to effectively analyze, design and develop aerospace and aviation products, workspaces, operations and training programs.

Graduates of this program will be prepared for management, research, and training positions in aerospace and aircraft manufacturing, airlines, flight training, and government.

**2. IMPACT ASSESSMENT**

**A. 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, including enrollment, national ranking, etc.?

Safety of operations is the primary focus of every aviation entity. The Federal Aviation Administration (FAA) Human Factors Policy Order 9550.8 has established policy, procedures, and responsibilities for incorporating and coordinating human factors considerations into all aspects of civil aviation in the US.

Human factors issues, specifically human errors, contribute to more aircraft incidents and accidents than any other single factor. Human errors include errors by the flight crew, maintenance personnel, air traffic controllers, and others who have a direct impact on flight safety.

The aviation industry continues to make rapid changes, investing in new technologies and equipment. Since this evolution is occurring faster than the ability to predict how humans will interact with it, the industry cannot rely on learnings from

experience but must use the scientific principles of human factors to accurately assess human performance concerns in design, training, and procedures, to name a few.

Human factors professionals gather information about human abilities, limitations, and other characteristics to better understand how humans can most safely and efficiently be integrated into aircraft design, training, policies, and procedures to enable humans to perform better.

Aircraft manufacturers, like Boeing and Airbus, commercial airlines, corporate aviation, air traffic control, aircraft maintenance facilities, among others rely on human factors engineers to improve human interaction with the many aspects of the aviation system. Using the principles of cognitive psychology, human performance, physiology, visual perception, ergonomics, and human-computer interface design, human factors scientists analyze operational safety and develop methods and tools to better manage human error.

Students currently enrolled in the ASU Aviation, Human Systems Engineering, and other undergraduate programs will find this degree program of interest to expand their knowledge and be able to enter the industry at mid and higher-level roles. Aviation industry personnel will also find this program beneficial as the aviation industry evolves into new and unique areas focusing artificial intelligence, the environment, and expanded areas of safety, to name a few.

Noted statistics include:

- Over the next 20 years, airlines will add over 25,000 new aircraft to the current 17,000-strong commercial fleet
- Aircraft design and manufacturing needs to be fast-tracked
- Training capacity insufficient to meet demand
- Learning methodologies not responsive to new evolving learning needs

<https://www.boeing.com/resources/boeingdotcom/commercial/market/boeing-market-insight/assets/downloads/pilot-shortage-thought-leadership-2018%20.pdf>

[https://cdn.ymaws.com/www.raa.org/resource/resmgr/2018ar/raa\\_annual\\_report\\_2018\\_v18\\_o.pdf](https://cdn.ymaws.com/www.raa.org/resource/resmgr/2018ar/raa_annual_report_2018_v18_o.pdf)

<https://nbaa.org/wp-content/uploads/2018/03/2017-nbaa-annual-report.pdf>

<https://www.icao.int/newsroom/pages/icao-addresses-shortage-of-skilled-aviation-professionals.aspx>

The aviation industry plays a key role not only in the global economy through the employment of thousands of people, but also on the transport of products, food, medication, as well as individuals traveling for business and pleasure. It is essential that the industry employs human factors specialists to ensure the safety and continued efficiencies of this industry.

**B. Please identify other related ASU programs and describe how the new concentration will complement these existing ASU programs?** If applicable, statements of support from affected academic unit administrators should be included with this proposal submission.

MSTech in Technology (Aviation Management and Human Factors) is a similar program offered in The Polytechnic School under the Aviation unit. The MS in Human Systems Engineering (Aviation Human Factors) faculty, who are a part of the Human Systems Engineering unit, are working closely with the Aviation unit to ensure an efficient collaboration.

The MSTech in Technology (Aviation Management and Human Factors) currently focuses mainly on the aviation industry with a subset of human factors-related curriculum. That is, it does not include the core human systems engineering courses that will be required in the MS in Human Systems Engineering (Aviation Human Factors) concentration. There is a significant need to offer this new concentration, as the MSTech in Technology (Aviation Management and Human Factors) is planned to be replaced with a full MS in Aviation Management and Human Factors, where the curriculum will be solely focused on aviation management-related topics and issues. With this change, students who would like to focus on aviation within the broader realm of human factors and human systems engineering will be able to do so with this proposed concentration, and students who would only like to pursue a graduate degree in aviation management will also be able to do so through the future MS in Aviation Management and Human Factors degree program. While the Polytechnic School is still working on these additional proposals, it is pertinent to note that this is a planned adjustment, as it closely affects both the Aviation unit and Human Systems Engineering unit.

**C. Is this an interdisciplinary concentration?** If yes, please address the relationship of the proposed concentration to other existing degree programs and any parallel or similar concentrations in those degree programs. (Please include relevant Memoranda of Understanding regarding this interdisciplinary concentration from all applicable academic units.)

N/A

**3. STUDENT LEARNING OUTCOMES AND ASSESSMENT**

Attach a PDF copy of the assessment plan printed from the University Office of Evaluation and Educational Effectiveness assessment portal demonstrating UOEEE’s approval of your assessment plan for this program. Visit the assessment portal at <https://uoeee.asu.edu/assessment-portal> or contact [uoeee@asu.edu](mailto:uoeee@asu.edu) with any questions.

See Appendix II for Assessment Plan approved by UOEEE.

**4. CURRICULAR STRUCTURE**

Please ensure that all *new core* course proposals have been submitted to the Provost’s office through the Curriculum ChangeMaker online course proposal submission system before this initiative is put on the University Graduate Council and CAPC agendas.

<b>Core Courses for the Degree</b>			
<i>Ensure the core listed below is the same as for the standalone degree</i>			
Prefix and Number	Course Title	New Course?	Credit Hours
HSE 520	Methods and Tools in Applied Cognitive Science	No	3
HSE 530	Intermediate Statistics for Human Systems Engineering	No	3
HSE 531	Data Analytics: Modeling Human Subjects Data	No	3
HSE 542	Foundations of Human Systems Engineering	No	3
<i>Section sub-total:</i>			12
<b>Required Concentration Courses</b>			
Prefix and Number	Course Title	New Course?	Credit Hours
AMT 533	Aviation Systems and Psychology	No	3
AMT 565	Safety in Complex Systems	No	3
<i>Section sub-total:</i>			6
<b>Elective or Research Courses</b>			
<i>(as deemed necessary by supervisory committee)</i>			
Prefix and Number	Course Title	New Course?	Credit Hours
HSE 592	Research <i>(required for those in thesis culminating experience; optional for all other students in the program)</i>	No	0-3
	Graduate level elective options will include 500-level AMT and HSE courses, such as the following AMT 546 Crew Resource Management/Line-Oriented Flight Training, AMT 541 Aerospace Physiology, and AMT 570 Unmanned Aerial Systems. Others will require approval from the program chair.	No	3-12
<i>Section sub-total:</i>			6 or 12
<b>Culminating Experience(s)</b>			Credit Hours
<i>E.g. – Capstone course, portfolio, written comprehensive exam, applied project, thesis (must be 6 credit hours with oral defense), dissertation (must be 12 credit hours with oral defense)</i>			
Portfolio			0

HSE 593 Applied Project	6
HSE 599 Thesis	6
<i>Section sub-total:</i>	0 or 6
<b>Total required credit hours</b>	<b>30</b>

**B. Please describe the culminating experience(s) required for completion of the existing degree and major, and the proposed concentration** (e.g., thesis, dissertation, comprehensive exams, capstone course, portfolio, applied project).

The culminating experience options will be consistent with the MS Human Systems Engineering program, but with a focus in Aviation Human Factors. The three culminating experience options include 1) a written thesis that is orally defended, 2) an industry-led applied project that is reported in writing and presented in a public forum (e.g., conference, brown bag seminar, Innovation Showcase), or 3) a portfolio that presents three projects from classes and reflections on them.

**C. Please describe any other requirements for completion of the existing degree and major, and the proposed concentration** (e.g., internships, clinical requirements, field studies, foreign language exam etc.).

N/A

**5. COMPREHENSIVE EXAMS**

*(Please choose what is appropriate for the degree type selected)*

**A. Master’s Comprehensive Exam (when applicable), please select from the appropriate option.**

N/A

**6. COURSES**

**A. New Courses Required for Proposed Program:** Provide course prefix, number, title, credit hours and brief description for any new courses required for this program.

No new courses are required. All concentration course options already exist as AMT-prefix courses, which operates out of the Aviation unit within the Polytechnic School.

**7. ADMINISTRATION AND RESOURCES**

**A. Administration:** How will the proposed concentration be administered (including recommendations for admissions, student advisement, retention etc.)? Describe the administering body in detail, especially if the proposed concentration is part of a larger interdisciplinary initiative. How will the graduate support staffing needs for this proposed concentration program be met?

The Polytechnic School graduate advising team will manage the admission evaluation process, student advisement, and outreach efforts. The Human Systems Engineering program chair and graduate faculty will be involved in the application evaluation process and provide recommendations to advising for processing.

**B. Projected Enrollment:** How many students will be admitted immediately following final approval of the concentration? What are enrollment projections for the next three years?

<b>3-YEAR PROJECTED ANNUAL ENROLLMENT</b>			
Please utilize the following tabular format	<b>1<sup>st</sup> Year</b>	<b>2<sup>nd</sup> Year</b> (Yr. 1 continuing + new entering)	<b>3<sup>rd</sup> Year</b> (Yr. 1 & 2 continuing + new entering)

Number of Students in concentration (Headcount)	15	30	40
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**C. Resource requirements needed to launch and sustain the program:** Describe any new resources required for this concentration’s success such as new staff, new facilities, new library resources, new technology resources, etc. and include projected budget needs. 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 new resources are needed to launch or sustain the program.

**D. Current Faculty:** Complete the table below for all current faculty members who will teach in the program.

Name	Rank	Highest Degree	Area of Specialization/Expertise	Estimated Level of Involvement
Mary Niemczyk	Assoc Professor	PhD	Aviation, Psychology, Learning, Instruction	High
Nancy Cooke	Professor and HSE Program Chair	PhD	Human Systems Engineering, Aviation teamwork	High
Rob Gray	Professor	PhD	Human Systems Engineering, perception-action	High
Scotty Craig	Associate Professor & Graduate Program Chair	PhD	Human Systems Engineering, cognitive science, educational technology	High
Rod Roscoe	Associate Professor	PhD	Human Systems Engineering, educational technology, design and design thinking in education, human-computer interactions	Medium
Robert Nullmeyer	Faculty Associate	PhD	Aviation Human Factors, establishing relationships between ASU and the aviation industry	Low
Michael Pearson	Clinical Associate Professor	JD & MBA	Aviation law and human resources	Low
Anthony Gagliardo	Faculty Associate	EdD	Aviation, unmanned aerial systems	Low
Ann Haluska	Future faculty (in the process of being hired)	MA	Aviation Management Strategies	Low

**8. REQUIRED SUPPORTING DOCUMENTS**

*(Please label accordingly, i.e., Appendix or Attachment A, B, etc.)*

Please include the following with your proposal:

- A.** Statements of support from all deans and impact statements of heads of impacted academic units (programs with similar names/content, utilizing courses, faculty, etc.)

See Appendix III.

**APPENDIX I**

**OPERATIONAL INFORMATION FOR GRADUATE PROGRAMS**

(This information is used to populate the Graduate Programs Search/catalog website.)

**1. Proposed name of concentration:** Aviation Human Factors

**2. Marketing description** *(Optional - 50 words maximum. The marketing description should not repeat content found in the program description.)*

N/A

**3. Provide a brief program description** *(Catalog type (i.e. will appear in Degree Search) – no more than 150 words. Do not include any admission or curriculum information)*

The MS program in human systems engineering with a concentration in aviation human factors provides students with a deep understanding of the science of human performance and experience in the aerospace and aviation industries.

Students in this program will participate in courses focusing on methods and tools in applied cognitive science, foundations of human systems engineering, uses of simulation, aviation physiology, and crew resource management, among others. The understanding of cognitive science and human systems concepts and tools will enable students to effectively analyze, design and develop aerospace and aviation products, workspaces, operations and training programs.

Graduates of this program will be prepared for management, research, and training positions in aerospace and aircraft manufacturing, airlines, flight training, and government.

**4. Delivery/Campus Information Options:** On-campus only (ground courses and iCourses)

**5. Campus(es) where program will be offered:**

*ASU Online curriculum consists of courses that have no face-to-face content. iCourses are online courses for students in on-campus programs. iCourses may be included in a program, but may not comprise the entirety of a program. On-campus programs must have some face-to-face content*

*Note: Office of the Provost approval is needed for ASU Online campus options.*

ASU Online only (all courses online and managed by ASU Online)

**All other campus or location options (please select all that apply):**

Downtown Phoenix     Polytechnic     Tempe     West     Other: \_\_\_\_\_

**Both** on-campus and  ASU Online\* - (check applicable campus(es) from options listed above)

*\*Note: Once students elect a campus or Online option, students will not be able to move between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online. Please complete the ASU Online Offering form in Curriculum ChangeMaker to begin this request. Prior to completing the online Curriculum ChangeMaker form, please contact EdPlus at [asuonline@asu.edu](mailto:asuonline@asu.edu) who can provide you with additional information regarding the online request process*

**6. Admission Requirements**

Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in engineering, aeronautical management, psychology or related field, from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admission application and application fee

2. official transcripts
3. GRE scores
4. letter of intent
5. professional resume
6. three letters of recommendation
7. proof of English proficiency

**Additional Application Information**

Applicants whose native language is not English must provide proof of English proficiency regardless of current residency.

Global Launch at ASU offers an online alternative to standardized testing for international students who are seeking admission to ASU but need proof of English proficiency: <https://learnenglish.asu.edu/online/admission>.

Applicants may request a GRE waiver if the applicant received a bachelor’s degree in a related field from an accredited institution in the United States with a cumulative GPA of 3.00 or better. Applicants can also submit a GRE waiver request form if they have five years of full-time applicable professional experience. Applicants can email [polygrad@asu.edu](mailto:polygrad@asu.edu) to request a waiver. An approved waiver does not guarantee admission.

**7. Application Review Terms (if applicable session):**

Indicate the first term and year in which applications will be opened for admission. Applications will be accepted on a rolling basis after that time.

*Note: It is the academic unit’s responsibility to display program deadline dates on their website.*

<b>Terms</b>	<b>Years</b>	<b>University Late Fee Deadline</b>
<input checked="" type="checkbox"/> Fall (regular) <input type="checkbox"/> Session B	(year): 2021 (year):	July 1st October 1st
<input checked="" type="checkbox"/> Spring (regular) <input type="checkbox"/> Session B	(year): 2022 (year):	December 1st February 8th
<input type="checkbox"/> Summer (regular) <input type="checkbox"/> Summer B	(year): (year):	May 14th May 14th
<p><i>Note: Session B is only available for approved online programs.</i></p>		

**Program admission deadlines website address:** <https://poly.engineering.asu.edu/academics/graduate-programs-overview/>

**8. Curricular Requirements:**

**Curricular Structure Breakdown for the Academic Catalog:**  
*(To be completed by the Graduate College)*

- 30 credit hours and a portfolio, or
- 30 credit hours and a thesis, or
- 30 credit hours including the required applied project course (HSE 593)

**Required Core (12 credit hours)**

- HSE 520 Methods and Tools in Applied Cognitive Science (3)
- HSE 530 Intermediate Statistics for Human Systems Engineering (3)
- HSE 531 Data Analytics: Modeling Human Subjects Data (3)
- HSE 542 Foundations of Human Systems Engineering (3)



**Concentration (6 credit hours)**

AMT 533 Aviation Systems and Psychology (3)  
 AMT 565 Safety in Complex Systems (3)

**Electives and Research (6 or 12 credit hours)**

**Culminating Experience (0 or 6 credit hours)**

HSE 593 Applied Project (6) or  
 HSE 599 Thesis (6) or  
 portfolio (0)

**Additional Curriculum Information**

For electives and research coursework, enrollment in HSE 592 Research for three credit hours is required for students completing a thesis, and optional for students completing the applied project or portfolio culminating experience. Students in all culminating experience options should contact the academic unit for an approved electives list.

Students completing a portfolio for the culminating experience must complete 12 credit hours of electives and research coursework.

9. **Allow 400-level courses:**     **Yes**     **No**

*Note: No more than six credit hours of 400-level coursework may be included on a graduate student plan of study.*

10. **Keywords:** List all keywords that could be used to search for this concentration. Keywords should be specific to the proposed concentration – limit 10 keywords.

aviation human factors, aviation psychology, crew resource management, flight training, aerospace human factors

**11. Area(s) of Interest**

- A. Select **one (1)** primary area of interest from the list below that applies to this program.

- |  |   |
|--|---|
| <input type="checkbox"/> <a href="#">Architecture &amp; Construction</a>         | <input type="checkbox"/> <a href="#">Interdisciplinary Studies</a>      |
| <input type="checkbox"/> <a href="#">Arts</a>                                    | <input type="checkbox"/> <a href="#">Law &amp; Justice</a>              |
| <input type="checkbox"/> <a href="#">Business</a>                                | <input type="checkbox"/> <a href="#">Mathematics</a>                    |
| <input type="checkbox"/> <a href="#">Communication &amp; Media</a>               | <input type="checkbox"/> <a href="#">Psychology</a>                     |
| <input type="checkbox"/> <a href="#">Education &amp; Teaching</a>                | <input type="checkbox"/> <a href="#">STEM</a>                           |
| <input checked="" type="checkbox"/> <a href="#">Engineering &amp; Technology</a> | <input type="checkbox"/> <a href="#">Science</a>                        |
| <input type="checkbox"/> <a href="#">Entrepreneurship</a>                        | <input type="checkbox"/> <a href="#">Social and Behavioral Sciences</a> |
| <input type="checkbox"/> <a href="#">Health &amp; Wellness</a>                   | <input type="checkbox"/> <a href="#">Sustainability</a>                 |
| <input type="checkbox"/> <a href="#">Humanities</a>                              |   |

- B. Select **one (1)** secondary area of interest from the list below that applies to this program.

- |  |   |
|--|---|
| <input type="checkbox"/> <a href="#">Architecture &amp; Construction</a> | <input type="checkbox"/> <a href="#">Interdisciplinary Studies</a>      |
| <input type="checkbox"/> <a href="#">Arts</a>                            | <input type="checkbox"/> <a href="#">Law &amp; Justice</a>              |
| <input type="checkbox"/> <a href="#">Business</a>                        | <input type="checkbox"/> <a href="#">Mathematics</a>                    |
| <input type="checkbox"/> <a href="#">Communications &amp; Media</a>      | <input type="checkbox"/> <a href="#">Psychology</a>                     |
| <input type="checkbox"/> <a href="#">Education &amp; Teaching</a>        | <input checked="" type="checkbox"/> <a href="#">STEM</a>                |
| <input type="checkbox"/> <a href="#">Engineering &amp; Technology</a>    | <input type="checkbox"/> <a href="#">Science</a>                        |
| <input type="checkbox"/> <a href="#">Entrepreneurship</a>                | <input type="checkbox"/> <a href="#">Social and Behavioral Sciences</a> |
| <input type="checkbox"/> <a href="#">Health &amp; Wellness</a>           | <input type="checkbox"/> <a href="#">Sustainability</a>                 |
| <input type="checkbox"/> <a href="#">Humanities</a>                      |   |

**12. Contact and Support Information:**

<b>Office Location - Building Code &amp; Room:</b> <i>(Search ASU map)</i>	Wanner 101
<b>Campus Telephone Number:</b> <i>(may not be an individual's number)</i>	480-727-4723
<b>Program Email Address:</b> <i>(may not be an individual's email)</i>	polygrad@asu.edu
<b>Program Website Address:</b> <i>(if one is not yet created, use unit website until one can be established)</i>	poly.engineering.asu.edu
<b>Program Director (Name):</b>	Nancy Cooke
<b>Program Director (ASURITE):</b>	ncooke
<b>Program Support Staff (Name):</b>	Amy Riggs awolsey Meghan Vaughn mmackowi
<b>Program Support Staff (ASURITE):</b>	Amy Riggs awolsey Meghan Vaughn mmackowi
<b>Admissions Contact (Name):</b>	Amy Riggs awolsey Meghan Vaughn mmackowi
<b>Admissions Contact (ASURITE):</b>	Amy Riggs awolsey Meghan Vaughn mmackowi

**13. Application and iPOS Recommendations:** List the Faculty and Staff that will input admission/POS recommendations to Gportal **and** indicate their approval for Admissions and/or POS:

NAME	ASURITE	ADMSN	POS
Amy Riggs	awolsey	X	X
Blake Holder	bholder	X	X
Meghan Vaughn	mmackowi	X	X

## (NEW GRADUATE INITIATIVES)

### PROPOSAL PROCEDURES CHECKLIST

Academic units should adhere to the following procedures when requesting new curricular initiatives (degrees, concentrations or certificates).

**Obtain the required approval from the Office of the Provost to move the initiative forward for internal ASU governance reviews/approvals. Please see the academic strategic plan website at: <https://provost.asu.edu/curriculum-development>.**

**Submit any new courses that will be required for the new curricular program to the Curriculum ChangeMaker online course approval system for review and approval.**

- Additional information can be found at the Provost's Office Curriculum Development website: [Courses link](#)
- For questions regarding proposing new courses, send an email to: [courses@asu.edu](mailto:courses@asu.edu)

**Prepare the applicable proposal template and operational appendix for the proposed initiative.**

**Obtain letters or memos of support or collaboration (if applicable).**

- When resources (faculty or courses) from another academic unit will be utilized
- When other academic units may be impacted by the proposed program request
- if the program will have an online delivery option support will be required from the Provost's office and ASU Online. *(Please complete the ASU Online Offering form in Curriculum ChangeMaker to begin this request.)*

**Obtain the internal reviews/approvals of the academic unit.**

- Internal faculty governance review committee(s)
- academic unit head (e.g. Department Chair or School Director)
- academic unit Dean (will submit approved proposal to the [curriculumplanning@asu.edu](mailto:curriculumplanning@asu.edu) email account for further ASU internal governance reviews (as applicable, University Graduate Council, CAPC and Senate)

### **Additional Recommendations**

All new graduate programs require specific processes and procedures to maintain a successful degree program. Below are items that the Graduate College strongly recommends that academic units establish after the program is approved for implementation.

**Establish satisfactory academic progress policies, processes and guidelines** – Check within the proposing academic unit and/or college to see if there are existing academic progress policies and processes in place. If none have been established, please go to [http://graduate.asu.edu/faculty\\_staff/policies](http://graduate.asu.edu/faculty_staff/policies) and scroll down to the **academic progress review and remediation processes** (for faculty and staff) section to locate the reference tool and samples for establishing these procedures.

**Establish a Graduate Student Handbook for the new degree program** – Students need to know the specific requirements and milestones they must meet throughout their degree program. A Graduate Student Handbook provided to students when they are admitted to the degree program and published on the website for the new degree gives students this information. Include in the handbook the unit/college satisfactory academic progress policies, current degree program requirements (outlined in the approved proposal) and provide a link to the Graduate Policies and Procedures website. Please go to [http://graduate.asu.edu/faculty\\_staff/policies](http://graduate.asu.edu/faculty_staff/policies) to access Graduate Policies and Procedures.

## APPENDIX II

### Assessment Plan

#### MS in Human Systems Engineering (Aviation Human Factors)

MS1563564689  
Approved

ES-Ira A Fulton  
Schools of Engineering

#### Mission

The Master of Science in Human Systems Engineering at ASU seeks to train students in the skills needed to improve our world by applying psychologically-based principles. As teachers and mentors, we provided our students a guided experience that trains them in the theories and methods of experimental psychology and cognitive science. As researchers, the program investigates how humans interact with both other humans and new innovations in technology. We seek to improve these interactions by advancing knowledge of underlying psychological processes and by providing innovations in system design and training to facilitate optimal interactions. In so doing, we embrace ASU's goals of providing the highest quality of education possible to our students. We also help to answer ASU's challenge of helping people lead healthier more fulfilled lives through the use of applied science and technology.

#### Goals

We embrace ASU's goals of providing the highest quality of education possible to our students. We also help to answer ASU's challenge of helping people lead healthier more fulfilled lives through the use of applied science and technology.

#### Outcome 1

Ability to choose the appropriate statistical analysis, address violations of assumptions (e.g., sphericity), & run the analysis using SPSS.

#### Concepts

Students will use the principles of scientific investigation and methods and theories uses of simulation, aviation physiology, and crew resource management.

#### Competencies

Analysis of human performance in aviation systems; quantitative skills pertinent to the development of such systems.

**Assessment Process:** Students will be assessed through an exam 3 times a semester in HSE 530 and weekly through data analysis assignments in HSE 531. Instructors tailor future classes to target the weaker areas.

#### Measure 1

Student performance on exams in HSE 530 (ANOVA)

#### Performance Criterion 1

95% of students will achieve mastery based on a faculty developed rubric.

#### Measure 2

Student Performance in HSE 531 (Data Analytics)

#### Performance Criterion 2

95% of students will achieve mastery based on a faculty developed rubric.

#### Outcome 2

Ability to apply the methods of human systems engineering to test a hypothesis or solve an applied problem

## MS in Human Systems Engineering (Aviation Human Factors)

MS1563564689  
Approved

ES-Ira A Fulton  
Schools of Engineering

### Concepts

Students will use the principles of scientific investigation and methods and theories uses of simulation, aviation physiology, and crew resource management.

**Assessment Process:** Students will be assessed in HSE 542 four times through the semester using design challenges. These challenge problems will be evaluated by the instructor using a rubric. Also, in HSE 520 students will be assessed 19 times through the semester by the instructor using a rubric. Instructors tailor future classes to target the weaker areas.

#### Measure 1

Student performance on assignments in HSE 520 (Methods and Tools in Applied Cognitive Science)

#### Performance Criterion 1

95% of students will show mastery of class concepts on the final class paper based on faculty created course concept rubric

#### Measure 2

Student performance on assignments in HSE 542 (Foundations of Human Systems Engineering)

#### Performance Criterion 2

95% of students will demonstrate mastery of class concepts based on their mean score on four design challenges throughout the class. A rubric designed by the instructor will guide the grading of the design challenges.

### Outcome 3

Ability to conduct independent research to address problems in the space of aviation systems and human performance in those systems.

### Concepts

Students will use the principles of scientific investigation and methods and theories uses of simulation, aviation physiology, and crew resource management.

**Assessment Process:** Students will be assessed by their advisor and committee members (thesis option) once in the semester at the defense of the culminating experience. Performance on the culminating experience will drive additional changes to the program and in particular, to the milestones for achieving the culminating experience.

#### Measure 1

Student passes or (pass with revisions) the defense of his or her thesis or applied project or portfolio

#### Performance Criterion 1

100% of students pass (or pass with revisions) the MS thesis defense or applied project or portfolio

### Competencies

Analysis of human performance in aviation systems; quantitative skills pertinent to the development of such systems.

## MS in Human Systems Engineering (Aviation Human Factors)

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Approved

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Schools of Engineering

### Measure 2

Students demonstrate competency in their culminating projects in the space of human performance in aviation systems.

### Performance Criterion 2

100% of students conduct a culminating project that includes human performance in aviation systems as evaluated by the student's advisor

**APPENDIX III**  
**Statements of Collaboration and Impact**

**Fulton Schools of Engineering – Official Submission**

**From:** [Sergio Quiros](#)  
**To:** [Curriculum Planning](#)  
**Cc:** [Jeremy Helm](#); [Cindy Boglin](#); [Erin DeBrino](#); [Nancy Cooke](#)  
**Subject:** FW: MS in Human Systems Engineering (Aviation Human Factors)  
**Date:** Thursday, September 24, 2020 9:19:41 AM  
**Attachments:** [PSE - MS HSE \(Aviation Human Factors\).pdf](#)  
[new-graduate-concentration-proposal\\_MS HSE Aviation Human Factors\\_5.13.20\\_signed.docx](#)

---

Hello,

Attached is the following proposal:

**Ira A. Fulton Schools of Engineering**  
*The Polytechnic School*  
Establishment of a graduate concentration  
**MS in Human Systems Engineering (Aviation Human Factors)**

Best,

*Sergio Quiros*

Specialist Senior, Academic and Student Affairs  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Tempe, AZ 85287-8109  
Phone: 480/727-5770  
Email: [Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)

College of Global Futures

**From:** [Christopher Boone](#)  
**To:** [Sergio Quiros](#)  
**Cc:** [James Collofello](#); [Jeremy Helm](#)  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review  
**Date:** Thursday, February 4, 2021 4:28:54 PM  
**Attachments:** [image003.png](#)

---

Dear Sergio,

The College of Global Futures has no objections and is happy to support the proposal.

Chris

Christopher Boone  
Dean, College of Global Futures  
Professor, School of Sustainability



<https://collegeofglobalfutures.asu.edu/>

PO Box 875502, Tempe, AZ 85287-5502

Executive Assistant: [Lorraine.Protocollo@asu.edu](mailto:Lorraine.Protocollo@asu.edu)

480-965-2236

*The College of Global Futures embraces ASU's mission as being a comprehensive public research university, measured not by whom it excludes, but rather by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves. We support and foster a culture of inclusiveness, tolerance, and respect that promotes equal opportunity and diversity among faculty, staff, and students and through our engagement with diverse communities within and beyond the University.*



Kapucinski, Anne, R., Agrawal, Arun, Boone, Christopher, Bromaghim, Erin, Louis, Garrick E., Taylor, Dorceta E. 2020. *Strengthening Sustainability Programs and Curricula in Higher Education*. Washington, D.C.: The National Academies Press. <https://doi.org/10.17226/25821>

---

**From:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>  
**Sent:** Thursday, February 4, 2021 2:40 PM  
**To:** Christopher Boone <[Christopher.G.Boone@asu.edu](mailto:Christopher.G.Boone@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Dr. Boone,

The Graduate College has indicated that our proposed [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration cannot move forward through the university's review



and approval process without a response from your academic unit. Do you have any questions or concerns.

Thank you,

*Sergio G. Quiros*

Specialist Senior, Academic and Student Affairs  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Tempe, AZ 85287-8109  
Phone: 480/727-5770  
Email: [Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)

---

**From:** Sergio Quiros  
**Sent:** Monday, November 9, 2020 4:25 PM  
**To:** Christopher Boone <[Christopher.G.Boone@asu.edu](mailto:Christopher.G.Boone@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

*Sent on behalf of Dr. James S. Collofello*

Hello,

I am writing to request an impact/support letter (email will suffice) for our proposed [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration. This degree program is offered by The Polytechnic School.

Please let me know if you have any questions or concerns.

jim

James S. Collofello  
Vice Dean for 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

## The College of Liberal Arts and Sciences

**From:** [Laurie Chassin](#)  
**To:** [Nancy Cooke](#); [Fabio Milner](#); [Sergio Quiros](#); [Cindy Boglin](#); [Erin DeBrino](#)  
**Cc:** [James Collofello](#); [Jeremy Helm](#); [Nancy Gonzales \(Provost Office\)](#)  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review  
**Date:** Wednesday, November 11, 2020 4:54:29 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)

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Thanks so much Nancy.

That was our only concern so if it has been corrected, the Psychology Department would be happy to support this proposal.

Hope that helps

Laurie

---

**From:** Nancy Cooke

**Sent:** Wednesday, November 11, 2020 4:46 PM

**To:** Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>; Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>; Cindy Boglin <[Cindy.Boglin@asu.edu](mailto:Cindy.Boglin@asu.edu)>; Erin DeBrino <[Erin.DeBrino@asu.edu](mailto:Erin.DeBrino@asu.edu)>

**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>; Laurie Chassin <[laurie.chassin@asu.edu](mailto:laurie.chassin@asu.edu)>; Nancy Gonzales (Dean) <[nancy.gonzales@asu.edu](mailto:nancy.gonzales@asu.edu)>

**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Yes, it is an issue of timing of the proposal preparation and course addition. I will make the correction. That said, the HSE MS program has been relying on PSY 530 for years now, but it has been taught primarily by Rob Gray of HSE for our majors. This change should make that distinction clear.

Thanks,

Nancy

---

**From:** Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>

**Sent:** Wednesday, November 11, 2020 4:42 PM

**To:** Nancy Cooke <[Nancy.Cooke@asu.edu](mailto:Nancy.Cooke@asu.edu)>; Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>; Cindy Boglin <[Cindy.Boglin@asu.edu](mailto:Cindy.Boglin@asu.edu)>; Erin DeBrino <[Erin.DeBrino@asu.edu](mailto:Erin.DeBrino@asu.edu)>

**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>; Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>; Laurie Chassin <[laurie.chassin@asu.edu](mailto:laurie.chassin@asu.edu)>; Nancy Gonzales (Dean) <[nancy.gonzales@asu.edu](mailto:nancy.gonzales@asu.edu)>

**Subject:** Re: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Dear Nancy,

The proposal ([https://www.dropbox.com/s/v6jou16yb7esno3/FSE%20-%20MS%20HSE%20\(Aviation%20Human%20Factors\).pdf?dl=0](https://www.dropbox.com/s/v6jou16yb7esno3/FSE%20-%20MS%20HSE%20(Aviation%20Human%20Factors).pdf?dl=0)) specifically mentions PSY 530 as an important part of the assessment but not as part of the program.

As such, it creates concern in the Department of Psychology and The College will not be able to support the proposal until this anomaly is corrected.

Best,

Fabio

**Fabio Augusto Milner, PhD**

*Associate Dean of Graduate Initiatives*

*Assistant Director, SA Levin MCMS Center*

[The College of Liberal Arts and Sciences](#)

*Director of Mathematics for STEM Education*

[School of Mathematical and Statistical Sciences](#)

**Arizona State University**



Armstrong Hall, Office 214

P: 480/965-5877 | F: 480/965-2110

[milner@asu.edu](mailto:milner@asu.edu)

URL: <https://thecollege.asu.edu/content/fabio-milner>

---

**From:** Nancy Cooke <[Nancy.Cooke@asu.edu](mailto:Nancy.Cooke@asu.edu)>  
**Date:** Wednesday, November 11, 2020 at 16:11  
**To:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>, Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>, Cindy Boglin <[Cindy.Boglin@asu.edu](mailto:Cindy.Boglin@asu.edu)>, Erin DeBrino <[Erin.DeBrino@asu.edu](mailto:Erin.DeBrino@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>, Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

**Resent-From:** <[milner@asu.edu](mailto:milner@asu.edu)>

We have been in the process of adding HSE 530 which will take the place of PSY 530 in the curriculum. It is a graduate statistics course for human systems engineering graduate students. The PSY 530 should now be HSE 530 in the evaluation metrics. Sorry for the confusion. Please let me know if you have any more questions.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Nancy J. Cooke  
Professor, Human Systems Engineering  
Director, Center for Human, AI, and Robot Teaming  
The Polytechnic School  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Mesa, AZ 85212  
Phone: 480-727-5158  
Email: [ncooke@asu.edu](mailto:ncooke@asu.edu)  
Web: <https://isearch.asu.edu/profile/559491>  
Assistant: Veronica Handorf ([veronica.handorf@asu.edu](mailto:veronica.handorf@asu.edu))  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

---

**From:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>  
**Sent:** Wednesday, November 11, 2020 2:34 PM  
**To:** Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>; Cindy Boglin <[Cindy.Boglin@asu.edu](mailto:Cindy.Boglin@asu.edu)>; Nancy Cooke <[Nancy.Cooke@asu.edu](mailto:Nancy.Cooke@asu.edu)>; Erin DeBrino <[Erin.DeBrino@asu.edu](mailto:Erin.DeBrino@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Hello Fabio,  
I am copying folks from the Polytechnic School in this email for clarification.  
Thank you,

*Sergio S. Quiros*

Specialist Senior, Academic and Student Affairs  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Tempe, AZ 85287-8109  
Phone: 480/727-5770  
Email: [Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)

---

**From:** Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>

**Sent:** Wednesday, November 11, 2020 9:19 AM

**To:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>

**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>;

Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>

**Subject:** Re: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Dear Sergio,

Performance on PSY 530 is one of the evaluation metrics but PSY 530 is not part of the curriculum. Is there a typo or is PSY 530 going to be required in this program?

Please explain.

Best,

Fabio

**Fabio Augusto Milner, PhD**

*Associate Dean of Graduate Initiatives*

*Assistant Director, SA Levin MCMS Center*

*[The College of Liberal Arts and Sciences](#)*

*Director of Mathematics for STEM Education*

*[School of Mathematical and Statistical Sciences](#)*

**Arizona State University**



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[milner@asu.edu](mailto:milner@asu.edu)

URL: <https://thecollege.asu.edu/content/fabio-milner>

---

**From:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>

**Date:** Monday, November 9, 2020 at 16:25

**To:** Fabio Milner <[milner@asu.edu](mailto:milner@asu.edu)>

**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>

**Subject:** MS in Human Systems Engineering (Aviation Human Factors) - Graduate College

Review

*Sent on behalf of Dr. James S. Collofello*

Hello,

I am writing to request an impact/support letter (email will suffice) for our proposed

[MS in Human Systems Engineering \(Aviation](#)

[https://www.dropbox.com/s/v6jou16yb7esno3/FSE%20-](https://www.dropbox.com/s/v6jou16yb7esno3/FSE%20-%20MS%20HSE%20(Aviation%20Human%20Factors).pdf?dl=0)

[Human Factors\)](https://www.dropbox.com/s/v6jou16yb7esno3/FSE%20-%20MS%20HSE%20(Aviation%20Human%20Factors).pdf?dl=0)

concentration. This degree program is offered by The Polytechnic School.

Please let me know if you have any questions or concerns.

jim

James S. Collofello

Vice Dean for 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

## College of Integrative Sciences and Arts

**From:** [Duane Roen](#)  
**To:** [Sergio Quiros](#)  
**Cc:** [James Collofello](#); [Jeremy Helm](#)  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review  
**Date:** Monday, November 9, 2020 7:02:31 PM

---

Jim, Jeremy, and Sergio,

CISA is happy to support the proposal for MS in Human Systems Engineering (Aviation Human Factors).

Please let us know what else we can do to be supportive. Thanks.

Best,  
Duane

**Duane Roen**  
Dean, College of Integrative Sciences and Arts  
Vice Provost, Polytechnic campus  
**Arizona State University**  
Mail Code: 2780  
7271 E Sonoran Arroyo Mall  
Mesa, AZ 85212-8415  
P: 480-727-1415

---

**From:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>  
**Sent:** Monday, November 9, 2020 4:25 PM  
**To:** Duane Roen <[Duane.Roen@asu.edu](mailto:Duane.Roen@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

*Sent on behalf of Dr. James S. Collofello*

Hello,

I am writing to request an impact/support letter (email will suffice) for our proposed [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration. This degree program is offered by The Polytechnic School.

Please let me know if you have any questions or concerns.

jim

James S. Collofello  
Vice Dean for 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

## College of Health Solutions

**From:** [Deborah Helitzer \(Dean\)](#)  
**To:** [Sergio Quiros](#)  
**Cc:** [James Collofello](#); [Jeremy Helm](#)  
**Subject:** Re: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review  
**Date:** Monday, November 9, 2020 5:04:00 PM  
**Attachments:** [image001.png](#)

---

The College of Health Solutions sees no negative impact from the proposed degree and wishes you the best of luck in getting it approved!

Deborah  
*Deborah L. Helitzer, Sc.D.*  
Dean and Professor  
College of Health Solutions  
Arizona State University  
550 North 3<sup>rd</sup> Street  
Phoenix AZ 85004  
602.496.2511  
[deborah.helitzer@asu.edu](mailto:deborah.helitzer@asu.edu)  
Web: [chs.asu.edu](http://chs.asu.edu)

For appointments and information, please contact Daniel Eckstrom ([Daniel.Eckstrom@asu.edu](mailto:Daniel.Eckstrom@asu.edu))



---

**From:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>  
**Date:** Monday, November 9, 2020 at 4:25 PM  
**To:** "Deborah Helitzer (Dean)" <[Deborah.Helitzer@asu.edu](mailto:Deborah.Helitzer@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>, Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

*Sent on behalf of Dr. James S. Collofello*

Hello,

I am writing to request an impact/support letter (email will suffice) for our proposed [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration. This degree program is offered by The Polytechnic School.

Please let me know if you have any questions or concerns.

jim

James S. Collofello

Vice Dean for 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

New College of Interdisciplinary Arts and Sciences

**From:** Patricia Friedrich <[Patricia.Friedrich@asu.edu](mailto:Patricia.Friedrich@asu.edu)>  
**Date:** March 17, 2021 at 4:15:31 PM MST  
**To:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>  
**Cc:** Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** Re: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Hi Sergio,

Just to confirm with have no concerns regarding the Aviation Human Factors concentration. We have let the Grad College know as well. Thank you! Patty

**Patricia Friedrich, PhD**  
**She, Her, Hers**  
**Associate Dean of Academic Programs and Faculty Affairs,**  
**New College of Interdisciplinary Arts and Sciences**  
**Professor of Sociolinguistics,**  
**School of Social and Behavioral Sciences**

**Arizona State University**  
**P. O. Box 37100**  
**4701 W. Thunderbird Rd. Mail Code 3051**  
**Phoenix, AZ, USA 85069-7100**  
**voice 602 543-6046**

**From:** Sergio Quiros <[Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)>  
**Date:** Friday, February 26, 2021 at 4:49 PM  
**To:** Patricia Friedrich <[Patricia.Friedrich@asu.edu](mailto:Patricia.Friedrich@asu.edu)>  
**Cc:** Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Dr. Friedrich,

Sorry to bother you again, I have searched my files and I do not believe that we received a statement of support for the [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration.

Thank you,

*Sergio Q. Quiros*

Specialist Senior, Academic and Student Affairs  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Tempe, AZ 85287-8109

Phone: 480/727-5770  
Email: [Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)

**From:** Sergio Quiros  
**Sent:** Thursday, February 4, 2021 2:40 PM  
**To:** Patricia Friedrich <[Patricia.Friedrich@asu.edu](mailto:Patricia.Friedrich@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** RE: MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

Dr. Friedrich,

The Graduate College has indicated that our proposed [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration cannot move forward through the university's review and approval process without a response from your unit. Do you have any questions or concerns.

Thank you,

*Sergio Quiros*

Specialist Senior, Academic and Student Affairs  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Tempe, AZ 85287-8109  
Phone: 480/727-5770  
Email: [Sergio.Quiros@asu.edu](mailto:Sergio.Quiros@asu.edu)

**From:** Sergio Quiros  
**Sent:** Monday, November 9, 2020 4:25 PM  
**To:** Patricia Friedrich <[Patricia.Friedrich@asu.edu](mailto:Patricia.Friedrich@asu.edu)>  
**Cc:** James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>; Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** MS in Human Systems Engineering (Aviation Human Factors) - Graduate College Review

*Sent on behalf of Dr. James S. Collofello*

Hello,

I am writing to request an impact/support letter (email will suffice) for our proposed [MS in Human Systems Engineering \(Aviation Human Factors\)](#) concentration. This degree program is offered by The Polytechnic School.

Please let me know if you have any questions or concerns.

jim

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