Arizona State University
Academic Strategic Plan Archive
For 2019-2020 Planning

This document provides an archival record of the Arizona State University academic strategic plan submitted during the 2018-2019 academic year for 2019-2020 planning. The Arizona Board of Regents Academic Strategic Plans Policy (2-223) states that this institution is required to submit an annual strategic plan for approval, which includes new academic programs, certain program eliminations and organizational unit changes. Other changes are reviewed as part of ASU's internal academic plan.

Note: Inclusion in this document does not indicate that the program or change has been approved by the university. This document only notates programs and changes which were approved for the 2019-2020 planning process.

About this Document

To navigate this version of the Academic Strategic Plan Archive, refer to the table of contents and the bookmarks provided. The table of contents provides a hyperlinked listing of resources in the order in which they appear in this document. Keyword searches may be employed as an additional means of locating resources within this document.

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Item Name: Request for New Academic Programs for Arizona State University

☒   Action Item

Requested Action: Arizona State University asks the committee to review and recommend for board approval the new program requests effective in the 2019-2020 catalog year.

Background/History of Previous Board Action

As provided in the board policy, new program requests may be submitted throughout the year with the approval of the Academic Affairs and Educational Attainment Committee.

Discussion

Arizona State University seeks to add new programs for implementation in the 2019-2020 Academic Year. This request is for new academic programs:

- Bachelor of Arts in Community Development
- Bachelor of Science in Natural Resource Management
- Bachelor of Science in Sports Science and Performance Programming
- Bachelor of Science in Sustainable Food Systems
- Master of Arts in Classical Liberal Education and Leadership
- Executive Master in Community Development
- Master of Professional Studies in Community Development Practice
- Doctor of Philosophy in Data Science, Analytics and Engineering
- Master of Education in Early Childhood Education
- Master of Science in Environmental Engineering
- Doctor of Philosophy in Geographic Information Science
- Master of Global Leadership and Strategy
- Master of Science in Health Care Simulation
- Master of Science in Innovation and Venture Development
- Master of Arts in International Affairs and Leadership
- Master of Arts in Investigative Journalism
- Master of Arts in Language Teaching
- Master of Science in Natural Resource Management

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- Master of Science in Organizational Leadership
- Master of Arts in Policy Advocacy
- Doctor of Philosophy in Spanish Linguistics
- Master of Science in Supply Chain Management
- Master of Science in Sustainable Food Systems

Degree planning at ASU is founded on the Charter: ASU is a comprehensive public research university, measured not by whom it excludes, but 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.

All academic degree programs go through multiple review and approval processes to ensure their currency, quality, and relevance. Each year, the Provost initiates the academic planning process. The academic deans, in consultation with the directors of the academic units, submit information on all proposed new degrees, concentrations, minors, and certificates for the ensuing year, as well as changes to existing degree titles, program disestablishments, and creation of new organizations, organizational changes and disestablishments. Once reviewed and approved by the Provost, these initiatives begin the review process, including, as applicable, the curriculum committees in the academic unit, college, Graduate College, and University Senate. At each level, a substantive review of the proposed program is completed to ensure quality and to avoid redundancy with other programs. At any step in the approval process, programs can be tabled and/or returned to the academic unit for further clarification and/or revision.

The new degree programs advance issues of community development, health, education, language and linguistics, sustainability, leadership and innovation, and natural resources. In keeping with the 2018 Operational and Financial Review Enterprise Plan, the degree proposals are aligned strategically with our design aspirations to leverage our place, transform society, value entrepreneurship, include use-inspired research, enable student success, fuse intellectual disciplines, be socially embedded, and engage students with issues locally, nationally and internationally.

Committee Review and Recommendation
Arizona State University asks the committee to review and recommend for board approval the new program requests for the degree programs listed above.

Statutory/Policy Requirements

ABOR Policy 2-223.A, "The Academic Strategic Plan"

Arizona State University
Proposed New Program Summary

Proposed New Programs	Degree	College/School	Page Number
Undergraduate Programs			
Community Development	BA	Watts College of Public Service and Community Solutions	5
Natural Resource Management	BS	Watts College of Public Service and Community Solutions	8
Sports Science and Performance Programming	BS	College of Health Solutions	11
Sustainable Food Systems	BS	School of Sustainability	17
Graduate Programs			
Classical Liberal Education and Leadership	MA	College of Liberal Arts and Sciences	20
Community Development	Executive Master in Community Development (EMCD)	Watts College of Public Service and Community Solutions	23
Community Development Practice	MPS	Watts College of Public Service and Community Solutions	25
Data Science, Analytics and Engineering	PHD	Ira A. Fulton Schools of Engineering	27
Early Childhood Education	MED	Mary Lou Fulton Teachers College	31
Environmental Engineering	MS	Ira A. Fulton Schools of Engineering	34
Geographic Information Science	PHD	College of Liberal Arts and Sciences	37
Global Leadership and Strategy	MGLS	Thunderbird School of Global Management	40
Health Care Simulation	MS	College of Nursing and Health Innovation	42

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Innovation and Venture Development	MS	Herberger Institute for Design and the Arts	44
International Affairs and Leadership	MA	College of Liberal Arts and Sciences	48
Investigative Journalism	MA	Walter Cronkite School of Journalism and Mass Communication	52
Language Teaching	MA	College of Liberal Arts and Sciences	58
Natural Resource Management	MS	Watts College of Public Service and Community Solutions	61
Organizational Leadership	MS	College of Integrative Sciences and Arts	63
Policy Advocacy	MA	Watts College of Public Service and Community Solutions	66
Spanish Linguistics	PHD	College of Liberal Arts and Sciences	68
Supply Chain Management	MS	W. P. Carey School of Business	71
Sustainable Food Systems	MS	School of Sustainability	76

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ARIZONA STATE UNIVERSITY
ACADEMIC PROGRAMS

Table 1 - Proposed New Programs

Name of Proposed Degree (degree type and major), College/School, Location, Anticipated Catalog Year	Program Fee Required? (Yes or No)	Brief Description Justification and Identified Market Need	Learning Outcomes and Assessment Plan	Projected 3rd Year Enrollment
New Undergraduate Degrees				
Bachelor of Arts in Community Development Watts College of Public Service and Community Solutions *School of Community Resources and Development* (Downtown Phoenix) 2019-2020	No	**Description and Justification:** The BA in Community Development teaches students how to plan, develop, implement, monitor and evaluate community projects. It also provides students with an understanding of policy analysis, program and project management and community/social research. Community Development is a long-established, global, professionally based academic discipline currently not incorporated into ASU's degree-granting portfolio. There are 32 universities offering graduate Community Development degree programs in the U.S. alone, and a myriad of institutions offering undergraduate degree programs and concentrations in such diverse academic hubs as human development, rural sociology, social work, economics, regional planning and anthropology. This Community Development degree will advance dimensions of workforce	**Learning Outcome 1:** Students will demonstrate an understanding of sustainable community and human service principles as a foundation for the integration of economic, social and environmental dimensions of community development. ● **Concepts:** Leadership; sustainability; economics and social change in community development. ● **Competencies:** Graduates will be able to create communities that employ sound leadership principles key to developing decisions relative to community development. ● **Assessment Method:** Student projects from CRD 301 Sustainable Communities will be assessed with a faculty designed rubric, developed in accordance with professional standards, incorporating sustainable communities, leadership, and social change in community development. Students in NLM 160 Voluntary Action and Community Leadership will be required to complete an assessment demonstrating their knowledge of community leadership, teamwork, and conflict resolution.	50

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development, housing, small business development, transportation, health care and financial capital development, adding value to the students and mission of the school, and thus serve the use-inspired, community-embeddedness design principles of ASU.

Market Need:
According to the U.S. Bureau of Labor Statistics, employment for social and community service managers is projected to grow at a rate of 10 percent between 2014 and 2024. Current Community Development (CD) salaries range from $65,000 to $134,000, with an average base pay of $41,656 for CD coordinators, $48,397 for community developers, $71,094 for a CD Representatives 1, $84,960 for CD managers and $107,742 for CD specialists (Glassdoor.com; Payscale.com; Salary.com). The Community Development degree will serve students seeking to enter the workforce immediately upon graduation as well as those seeking graduate study. Students completing this program could be expected to go into a variety of occupations from social and community service to real estate and property development.

- **Measures:** The curriculum will be monitored and refined based on student ability to draw a critical connection between sustainability at the organizational and community levels to prevailing principles of community development.

Learning Outcome 2: Students will demonstrate an understanding of the theory and techniques involved in applied ethics and social justice in the context of sustainable communities.
- **Concepts:** Ethics, social justice, development of sustainable communities.
- **Competencies:** Graduates will be proficient in articulating the importance of a human rights perspectives in community development.
- **Assessment Methods:** Students in CRD 46x Community Development Ethics will be required to write a final paper focusing on the role of ethics in sustainable community development.
  The paper will be assessed with a faculty designed rubric, developed in accordance with professional standards, incorporating applied ethics and social justice in community development. Students in CRD 41x Theoretical Perspectives on Community will complete a written assessment that demonstrates their knowledge of community justice theory.
- **Measures:** The curriculum will be monitored and refined based on measures indicating student ability to compare and

			contrast the different roles that social justice plays in community building, communicate the importance of ethical leadership to diverse audiences, and articulate the relationships among ethics, justice, and development. **Learning Outcome 3:** Graduates of the program will be able to synthesize research and think critically about research in diverse subjects including workforce development, housing, small business development, transportation, health care, and financial capital development. ● **Concepts:** Economic development, public services, outcomes-based community development. ● **Competencies:** The graduates will be able to analyze community resources within social, historical, and economic contexts; understand the complex interplay between workers and worker needs, opportunities, and impediments; and the role of private and public resources in the development of core and peripheral community services. ● **Assessment Method:** Students in CRD 22x Principles of Economic Development will complete a written assessment that demonstrates their mastery of content related to workforces, business development, and access to capital. Students in CRD 23x Essentials of Place will conduct in-depth analyses of the historical and contemporary needs and services to a neighborhood or community, culminating	

			in a plan to address specific avenues of development. The plan will be presented to a stakeholder community and the assessment will be a holistic analysis of student performance based on faculty-designed rubrics that include community feedback. ● **Measures**: The curriculum will be monitored and refined based on measures indicating student ability to understand the complex interplay between community assets, evaluate and present recommendations in community development planning, and work in groups to test assumptions and craft collaborative solutions.	
Bachelor of Science in Natural Resource Management Watts College of Public Service and Community Solutions *School of Community Resources and Development* (Downtown Phoenix) 2019-2020	No	**Description and Justification:** The BS in Natural Resource Management degree provides a transdisciplinary education that prepares students for careers in natural resource management in the public and private sectors. Natural resource management has historically emerged from a science-based curriculum. However, with an increased understanding of the role of humans in shaping natural environments, the profession recognizes the importance of social science in natural resource management. This Natural Resource Management degree incorporates the natural sciences, but has a strong focus on the social sciences aspect of natural resource management. Students learn to integrate	**Learning Outcome 1:** Graduates of the program will master the integration of managerial, social, and natural sciences to make informed decisions regarding natural resources. ● **Concepts:** The BLM management model, competing values, tradeoffs. ● **Competencies:** The graduates will understand how natural resource policy decisions are made; how research, information, and communication can shape public sentiment and regulation. ● **Assessment Methods:** Students in CRD 42x Decision Making in Natural Resource Management will complete an assessment of a major natural resource debate. The assessment will be evaluated by a faculty-designed rubric that gauges student understanding of competing values and resource claims. In CRD 48x	48

managerial, social and natural sciences to make informed decisions regarding natural resources. The degree speaks to ASU's design aspirations of the fusion of intellectual disciplines, community-embeddedness and use-inspired research.

Market Need:
Natural resources related employment is often obtained in federal and state management offices including USDA, agencies such as Forestry and Fish and Wildlife, and the National Parks Services. Other employers may include public and private institutions or non-governmental and international organizations. The job growth rate for a career in this field is about 7% – 11% between now and 2024 (BusinessManagementDegree.net). The U.S. Bureau of Labor Statistics (BLS) reports in 2017 that conservation scientists, including natural resource managers, earn a median annual wage of $60,970 (www.bls.gov).

The top-paying industry was scientific research and development, with an average wage of $84,970. Most conservation scientists are employed by federal, state and local governments (Learn.org).

Social Dimensions of Natural Resource Management, students will complete a final assessment that evaluates their grasp of the literature regarding social influence on natural resource planning.
- **Measures:** The curriculum will be monitored and refined based on student ability to articulate the influence of management decisions and broader social forces (public sentiment, political majorities) on choices regarding natural resource planning.

Learning Outcome 2: Graduates of the program will be able to compare and contrast the different roles that leisure plays in society as well as the roles that leisure plays within a natural resource setting.
- **Concepts:** The role of leisure in society, sustainable communities, natural environments, critical analysis.
- **Competencies:** Students will understand and be able to articulate the importance of leisure to individuals and groups within natural environmental communities.
- **Assessment Methods:** Students in PRM 120 Leisure and Quality of Life will be required to take a written exam or complete a final project to assess their knowledge of varying roles of leisure impacts on quality of life. In CRD 301 Sustainable Communities, students will complete a final project that will be assessed against a faculty-designed rubric focusing on the roles of leisure in society,

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sustainable communities and natural environments.

- **Measures:** The curriculum will be refined based on measures indicating student ability to compare and contrast different roles leisure plays in society, communicate the importance of leisure to diverse audiences, and articulate the relationships among leisure, sustainable communities, and natural environments.

Learning Outcome 3: Graduates of the program will demonstrate an understanding of the role of humans in shaping natural environments, incorporating social science aspects of natural resource management, in order to solve natural resource management problems through ethical reasoning, teamwork, and collaboration.

- **Concepts:** Human behavior in natural environments, preservation and interpretation of natural resources, ethical dimensions of natural resources, collaborative problem solving.
- **Competencies**: The graduates will demonstrate effective collaboration, utilization of social science data sets to understand how humans shape natural environments, the use of statistical models and proper testing methodologies to provide insight into real-world natural resource problems.
- **Assessment Methods:** In PRM 38x Principles of Natural Resource Management, students will complete a final project that demonstrates their

| | | | understanding of natural resource management challenges, and a holistic, faculty-designed rubric focusing on the role of humans in shaping natural environments. Students in PRM 470 Environmental Communication will complete a resource use interpretation project for an existing public lands organization, assessed by the course instructor using a faculty-designed rubric.
● **Measures**: The curriculum will be refined based on measures indicating student ability to understand and apply social science aspects of natural resource management; utilize real-world data sets in a team setting to interpret, evaluate and present recommended solutions to natural resource problems; ability to work in groups and apply principles of critical thinking, statistical models, and methodologies for testing results. | |
| Bachelor of Science in Sports Science and Performance Programming

College of Health Solutions

(Downtown Phoenix)

2019-2020 | Yes

$300 per semester | **Description and Justification:**
The BS in Sports Science and Performance Programming focuses on understanding and optimizing physical abilities for active groups ranging from sports to occupational and tactical populations. The ability to work with individuals at close to maximum effort requires specialized knowledge and skills related to these specific populations. The National Strength and Conditioning Association identifies the need for the sports and tactical performance coach to be knowledgeable about all areas of | **Learning Outcome 1:** Graduates of the BS in Sports Science and Performance Programming (SSP) will be able to assess the physical performance and movement efficiency of clients involved in high performance sports or activities.
● **Concepts:** Biomechanical analysis of movement and application of bioenergetics and metabolism with appropriate physiological tests to assess both current and potential optimal performance levels.
● **Competencies:** Application of scientific principles in anatomy, physiology and biomechanics to individual clients and | 270 |

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| | | human physiology and movement mechanics in order to keep up with the ever-expanding technologies used to track and monitor the participants. Jobs in this field, ranging from collegiate and professional sports to private industry, require a specific understanding of the human body's capabilities under intense physical and psychological workloads reaching the far end of the health continuum, the quest for optimal performance. As humans push closer to reaching maximum potential, the risk for serious and routine injuries rises as does the need for field experts with the requisite knowledge to minimize those injuries while still optimizing performance. These topics represent a specialized area within the broader field of exercise science but rely on a knowledge base not currently covered by existing coursework which focuses predominantly on generally healthy, but inactive, populations. Sports Science and Performance Programming will also provide more specific coursework for those preprofessional students enrolled in kinesiology who want to focus their rehabilitation careers in the sports medicine or athletics arena. This new degree allows the college to reach out to a new sector of students desiring to work with active populations or directly in the sports field. | teams; communication that leads to determining appropriate levels of participation and determining correct programming for improvement.
● **Assessment Methods:** In SSP 423 Performance Testing and Technology, and SSP 325 Applied Anatomy and Biomechanics of Sport and Movement, students will be assessed against a faculty designed rubric that measures critical thinking, problem solving and effective communication on the case studies presented. SSP 423 will have a final review project that will be graded from a faculty designed rubric that will evaluate a student's creative thinking, problem solving and ability to use quantitative reasoning to decipher information typically generated by health and movement tracking devices and effectively generate reports of information easily understandable by participants and coaches.
● **Measures:** The curriculum will be refined based on measures indicating student ability to apply principles of anatomy, physiology and biomechanics to evaluate individual performance, reduce injury, and communicate effectively with clients; and the ability to make evidence based recommendations using critical analysis of results in real-life experiences as well as the ability to interpret large data sets and determine relevant information required for reporting purposes. | |

Market Need:

Based on data compiled from Emsi analytics, the market for graduates in sports science is robust. The demand for graduates far exceeds supply, with over 70,000 annual openings for jobs associated with the degree, yet only 40,000 new degrees were conferred in this area in 2016. Specifically, the category of fitness trainer has over 23,000 annual openings, coaching over 17,000 annual openings, athletic trainer nearly 10,000 annual openings, and exercise physiologists over 3,000 annual openings. The projected job growth is over 8% from 2017 to 2022. The skills deemed as necessary for success in the careers reviewed include exercise physiology, movement analysis and biotechnology, all of which are key class components for the Sports Science and Performance Programming degree. Both the U.S. Bureau of Labor Statistics and Emsi report that median salaries for graduates in athletic training earn a median annual wage of $56,000 to $60,000 (www.bls.gov).

The Sports Science and Performance Programming degree is targeted towards those students with an interest in working with highly active, top-performing teams and individuals. The

Learning Outcome 2: Graduates of the BS in Sports Science and Performance Programming will be able to properly plan a program with the goal of optimizing the physical performance of the participant while making ethical recommendations that keep in mind the health and safety of the participant.

- **Concepts:** Physiological, neuromuscular and hormonal adaptations to exercise; physiological, biomechanical and anatomical differences in athletes; psychological aspects to performance coaching; nutritional factors affecting health and performance; ensuring physical health; ethical reasoning.
- **Competencies:** Applications of the principles of planned, progressed programming, including individual adaptations and methods to monitor the health and well-being of participants, proper communication strategies to enable optimal performance and determining appropriate nutritional needs based on the goals of the participant; appropriate decision making skills to determine the intensity of programs based on environmental conditions and appropriate determination of athlete workload, nutrition and hydration status to avoid poor health decisions.
- **Assessment Methods:** In SSP 460 Resistance Training Application and Theory, and SSP 434 Sports Movement and Conditioning, final projects will be

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		degree will adequately prepare students to attain certification from the National Strength and Conditioning Association to work as Certified Strength and Conditioning Specialists (CSCS) or Tactical Strength and Conditioning (TSAC) specialists. Recent legislation passed by the National Collegiate Athletics Association (NCAA) requires all sports performance coaches to hold the CSCS credential. Many other organizations, including Major League Baseball and the National Basketball Association have similar requirements with more to follow in the near future as liability related to injuries and deaths occurring in conditioning sessions have become a reality for today's athlete. These certifications represent the "gold standard" in the sports performance coaching industry and students graduating from the Sports Science and Performance Programming degree will be prepared for these certification exams.	assessed with a faculty designed rubric that incorporates a variety of planned programming models and promotes critical analysis by the student to determine the appropriate choices based on the specific physical and physiological characteristics of the participant and including a demonstration of effective communication to educate the participant on appropriate choices for nutritional and recovery factors to maximize results and monitor overall health; the rubric will also evaluate a student's ability to adequately determine workload demands and build in appropriate adjustments and progressions to ensure the health and safety of participants. ● **Measures:** The curriculum will be refined based on the student demonstrating the understanding of physiological and neuromuscular adaptation to exercise, consider the implications of physiological, anatomical and biomechanical differences in those decisions and properly demonstrate an ability to determine appropriate workload to ensure an effective and safe performance program design. **Learning Outcome 3:** Graduates of the BS in Sports Science and Performance Programming will be able to demonstrate an understanding of appropriate communication (coaching) techniques that take in consideration of gender, race, socio-economic status and human behavior influence	

			knowing that successful execution of a long term performance program is dependent on the ability of the coach to properly get the best performances and practices from their athletes.	
			● **Concepts:** Socio-economic, demographic and behavioral differences related to participation in performance based programs; psychological theory related to sports performance; coaching cues and communication strategies to improve motivation and participation.	
			● **Competencies:** Effective understanding of psycho-social principles as related to sport and performance related behaviors, including effective communication strategies and coaching cues with considerations of individual differences due to the backgrounds of participants and the situation (environment) provided; interpretation of social science data related to sports and human behavior.	
			● **Assessment Methods:** In KIN 348 Psychological Skills for Optimal Performance, case studies will be evaluated using faculty designed rubrics, which assess the ability of students to demonstrate ethical and effective coaching strategies, taking into consideration the psychological techniques and demographic differences of participants as well as data interpretation of human behavior related to health and performance, to improve the effectiveness and participation rates of the overall program. These case studies will review better coaching communication	

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			strategies and allow students to make appropriate choices for program decisions based on the needs of the individual.	
			● **Measures:** The curriculum will be refined based on the student demonstrating an understanding of the psychological, demographic and socio-economic impacts on the design of performance based programs for participants and the ability to effectively lead participants from diverse backgrounds and with individual motivations through a successful program.	
			Learning Outcome 4: Graduates of the BS in Sport Science and Performance Programming will be able to effectively incorporate principles of nutrition, psychology, coaching and health promotion into applied performance projects.	
			● **Concepts:** Nutritional and psychological factors affecting human performance; principles of health promotion and effective coaching as they relate to the development of a personalized performance strategy.	
			● **Competencies:** Effective individualized application of principles of coaching, psychology and health promotion, critical analysis of athlete health and well-being, application of nutritional and health related knowledge to enable optimal performance.	
			● **Assessment methods:** A multi-disciplinary team of instructors will develop the holistic rubric that will evaluate the culminating project for the program,	

| | | | assessing the appropriateness of the construct(s) included in the project with emphasis on ethical choices to promote improved performance and maintain optimal health.
● **Measures:** The curriculum will be refined based on the student demonstrating their ability to correctly take into consideration and apply the principles of nutrition, psychology, coaching and health promotion into the design of programs for optimal performance. | |
| Bachelor of Science in Sustainable Food Systems

School of Sustainability

(Tempe)

2019-2020 | No | **Description and Justification:**
The BS in Sustainable Food Systems will equip the next generation of students to understand the current food systems landscape from an interdisciplinary perspective and then participate in shaping it. Students from diverse backgrounds with an interest in any area related to food systems including business, social and natural sciences, and policy maximize the program's scope and reach. As part of the educational mission of the Swette Center for Sustainable Food Systems, this degree will be a collaboration of the School of Sustainability, College of Health Solutions and Morrison School of Agribusiness. The program will feature a core curriculum covering policy, science, social justice, economic development, health and wellness, governance, sustainability and agribusiness that introduces students to the complexity of food systems. | **Learning Outcome 1:** Graduates of the program will apply their knowledge of sustainable food systems by developing and implementing strategies within a real-world context through inquiry and analysis, problem solving, quantitative reasoning, teamwork and collaboration.
● **Concepts:** Food systems, sustainability, food systems policy, quantitative reasoning, communication.
● **Competencies:** Students will demonstrate their skills in the sustainability education competencies of strategic thinking, futures thinking, and collaboration.
● **Assessment Methods:** In SOS 232 Professional Skills in Sustainability, the case study challenge assignments will be assessed by a faculty-designed rubric that focuses on sustainability education competencies. In SOS 498 Capstone Workshop, the learning outcome will be assessed through a holistic analysis of the projects for the stakeholders/clients. | 200 |

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		It will be designed to take advantage of the strengths of the Tempe, Polytechnic, and Downtown Phoenix campuses by including focus areas that are specific to each campus. It will appeal to students from both rural and urban areas with demonstrated interest in food systems and a commitment to sustainable agriculture by including a wide range of electives allowing them to focus on what would best meet their needs and interests, from developing or enhancing their local food or agribusiness systems to finding solutions to urban food deserts to international development efforts. The program will also be offered online to provide access to students that may be unable to participate in a campus experience. **Market Need:** Graduates with a BS in Sustainable Food Systems will be prepared to assess, analyze, and create policies and processes related to food security, sustainable agriculture, climate change, food equity and economic development. Market analytics provided by Emsi indicate job growth within this sector will increase at an annual rate of 7.3 percent, and the U. S. Department of Labor projects an 11 percent increase in openings in the environmental specialist sector, with Arizona seeing an increase of	- **Measures:** The curriculum will be refined based on measures indicating student ability to develop and implement strategies in sustainable food systems, think critically and make societal recommendations using sustainability education competencies, apply quantitative reasoning to food-related questions, and solve real-world problems through teamwork and collaboration. **Learning Outcome 2:** Graduates of the program will demonstrate proficiency in critical, analytic and creative thinking by developing, communicating, and applying practical solutions to food sustainability challenges. - **Concepts:** Communicating and persuasion of complex material, critical thinking, analytic thinking, creativity, pragmatism, problem resolution and food sustainability - **Competencies:** Students will demonstrate their skills in the sustainability education competencies of systems thinking, normative thinking, and strategic thinking in their application of practical solutions to food sustainability challenges. - **Assessment Methods:** In SOS 310 Equity, Justice and Sustainability, students will be assessed against a faculty developed rubric that addresses the intersection of justice and sustainability that includes effective use of evidence, analysis and explanation, processes and strategies. A holistic assessment will be based on digital portfolios consisting of selected course	

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15 percent. Every year, there are an estimated 10,000 job openings due to growth and net replacement. Interviews conducted by the Swette Center for Sustainable Food Systems director with leaders from local, state, and federal government, as well as private sector businesses, and philanthropic and private equity investors have cited a critical need for graduates who understand food systems from a multidisciplinary lens. Sustainable food systems graduates will offer employers and graduate programs an integrated approach to developing solutions to sustainability challenges. Graduates of the program will understand the complexity of systems, have engaged in a range of knowledge and experience from different disciplinary perspectives, and understand the importance of planning for the future and how to engage stakeholders in that process.

assignments, reflections on sustainability education competencies, and creative communication.

- **Measures:** The curriculum will be refined based on measures indicating student ability to recognize the ethical issues involved in food systems, develop and apply practical solutions to food sustainability challenges, and consider the implications of actions in relation to the application of these solutions.

Learning Outcome 3: Graduates of the program will be able to synthesize, think critically, and communicate about the complexities of food systems from policy to business, health care to sustainability, locally, regionally, nationally, and globally.

- **Concepts:** Critical thinking, analytic thinking, synthesis, complexity, sustainability, effective communication
- **Competencies:** When the students analyze, synthesize and communicate the complexities of food systems, they will demonstrate their skills in the sustainability education competencies of systems thinking, normative thinking and strategic thinking.
- **Assessment Methods:** In School of Sustainability 200 and 300 level courses introducing aspects of food systems, students will be assessed against faculty developed rubrics that address their understanding of the complexities and intersections of agribusiness, science,

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			policy and governance, health, social justice and sustainability that includes effective use of evidence, analysis and synthesis. A holistic assessment will be based on a presentation assignment in the students' capstone internship course. ● **Measures:** The curriculum will be refined based on measures indicating student ability to evaluate and integrate the complexities in food systems as well as effectively create communication and presentations appropriate to different audiences.	
New Graduate Degrees				
Master of Arts in Classical Liberal Education and Leadership College of Liberal Arts and Sciences School of Civic and Economic Thought and Leadership (Tempe) 2019-2020	No	**Description and Justification:** The ASU Charter states that the university assumes "fundamental responsibility" for the communities it serves. This MA program is the result of a direct and felt community need: the need for teachers in classical-spaced charter schools, for continuing education and a graduate degree program suited to their particular educational niche. It will be a unique academic program serving a growing need in the community as well as an increasingly important national trend in the direction of liberal education. This MA program also fulfills a number of the design aspirations of a New American University. This program clearly "Leverages Our Place," contributes to "Transforming Society," "Fuses	**Learning Outcome 1:** Graduates from the MA in Classical Liberal Education and Leadership program will be able to create and effectively communicate persuasive interpretations of classic texts in literature, philosophy, politics, history, and related fields. ● **Concepts:** Graduates will demonstrate knowledge through persuasive interpretations of classic texts and how they relate to political, social, and leadership challenges of current times. ● **Competencies:** Students will demonstrate skills necessary for success in the areas of comparative analysis, leadership, and education. ● **Assessment Methods:** Term papers assigned for particular courses taken in the program will be reviewed using faculty-developed rubrics to assess students' ability to form and effectively communicate persuasive interpretations of	30

Intellectual Disciplines," and is "Socially Embedded."

Market Need:
Emsi data shows demand for secondary school teachers especially, with 41,000 annual openings nationally. In total, there are approximately 70,000 annual openings for careers in education in related positions such as teachers, administrators, and education counselors. Analysis suggests that charter schools make up approximately 2,755 of these job openings. The high volume of charter schools with a classical liberal education curriculum in the region supplies a large core market for this particular degree program. This strong core market will be augmented by a substantial national market among teachers at similar schools and also by the large and growing homeschooling community.

Comparative programs include the University of Dallas and Eastern University, both developed in the last 5 years in response to this market need. According to a recent survey by Hart Research Associates, 74 percent of employers would recommend a classical liberal educational approach to college-bound students.

classic texts in literature, philosophy, politics, history, and related fields. Students will be given regular written tests based on class readings, which will be assessed using faculty-developed rubrics.

- **Measures**: The curriculum will be monitored and refined based on measures of student ability to form and effectively communicate persuasive interpretations of classic texts in literature, philosophy, politics, history, and related fields and how the texts relate to contemporary political, social, and leadership challenges.

Learning Outcome 2: Graduates from the MA in Classical Liberal Education and Leadership program will be able to communicate ideas and arguments related to the history of social, political, and philosophical thought.

- **Concepts:** Graduates will demonstrate knowledge of the classic questions related to the human experience and methods of preparing persuasive arguments necessary to be a successful educator, administrator, or leader in any field.
- **Competencies:** Students will demonstrate skills necessary for successfully communicating persuasive arguments, classic perspectives, and lessons related to the timeless questions of human existence.
- **Assessment Methods:** Students' ability to communicate ideas and arguments on the comprehensive exam will be assessed using faculty-developed rubrics. Students' participation in discussions from

all core courses will be assessed according to faculty-developed rubric in accordance with established best practices. This method will draw from the rubric sections on argument construction, clarity, and depth of the understanding. Results will be examined by course as well as aggregated.

- **Measures**: The curriculum will be monitored and refined based on measures of student ability to verbally communicate persuasive arguments and classic perspectives.

Learning Outcome 3: Graduates from the MA in Classical Liberal Education and Leadership program will be able to synthesize themes from classic texts across disciplines from literature, philosophy, politics, history, and related fields.

- **Concepts:** Students will demonstrate knowledge of the classic texts in literature, philosophy, politics, history, and related fields to successfully lead in educational, civic and business organizations and institutions.
- **Competencies:** Students will demonstrate skills necessary to be successful in the areas of teaching, communication, public service, and business.
- **Assessment Methods:** Students will participate in ongoing course discussions about classic texts in literature, philosophy, politics, history and related fields, and their depth of understanding of these classic texts will be assessed using faculty-developed rubrics. This method will

			draw from the rubric section on integration of readings, and synthesis of multiple sources and across disciplines. Results will be examined by course as well as aggregated. ● **Measures**: The curriculum will be monitored and refined based on measures of student ability to synthesize themes from classic texts across disciplines from literature, philosophy, politics, history, and related fields.	
Executive Master in Community Development Watts College of Public Service and Community Solutions School of Community Resources and Development (Downtown Phoenix) 2020-2021	Yes $500 per credit hour	**Description and Justification:** The Executive Master in Community Development is an advanced master's degree designed specifically for mid-career working professionals who wish to expand their leadership potential and capacity in strategic community development. ASU offers Executive Master's degrees through schools such as Public Affairs, Sustainability, Thunderbird, and W. P. Carey. Community Development is a long established, global, professionally-based academic discipline currently not incorporated into Arizona State University's degree-granting portfolio. It focuses on strategic planning, development, implementation, and evaluation of community projects. It also provides a foundation in policy analysis, program and project management and community/social research. Community	**Learning Outcome 1:** Demonstrate a systematic and critical understanding of a substantial and complex body of knowledge at the frontier of community development ● **Concepts:** Roles and representations of community development, including international best practices. ● **Competencies:** Ability to demonstrate autonomy, authoritative judgement and responsibility as an expert and leading practitioner; demonstrate and apply ethical and professional standards to all work. ● **Assessment Methods:** Final Project in CRD XXX: Theory and Practice of Community Development. Students will be rated on their ability to critically assess a community development program. Final project in CRD XXX, Advanced Concepts and Methods in Community Development. Students will be rated on their ability to critically assess a	36

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Development requires a distinct, differentiated degree program that can add value to the students and mission of the School, and thus serve the use-inspired, community-embeddedness design principles of Arizona State University. This Executive Master degree is specifically designed for mid-career professionals, which distinguishes it from a) the research-oriented MS in Community Resources and Development that is currently offered and from b) the MPS in Community Development Practice (included on this plan.)

Market Need:
According to Salary.com, the average Community Development Manager salary in the United States is $109,856; the range typically falls between $94,795 and $126,822. Current Community Development and Community Economic Development salaries listed on Indeed.com range from $45,000 to $162,000. Many universities worldwide offer related degree programs or concentrations in such diverse academic hubs as human development, rural sociology, social work, economics, regional planning and anthropology. In the US, 32 universities offer graduate degree programs in Community Development; the University of Arizona offers a Master's of Development Practice. Graduates of this Executive

contemporary issue in community development studies.
- **Measure:** The curriculum will be refined based on measures indicating student ability to identify and understand the complex body of knowledge surrounding community development.

Learning Outcome 2: Demonstrate a range of analytical, creative, critical specialized research skills and be able to apply them to finding practical pathways in community development.
- **Concepts:** Understanding and role of culture and community development, including indigenous culture and multiculturalism; ability to apply research methods and skills in professional practice
- **Competencies:** Ability to disseminate and promote new insights to professional and academic peers
- **Assessment Methods:** Final project in CRD XXX, Community Development Policy. Students will be rated on policy critiques and research on constructing alternatives.
- **Measure:** The curriculum will be refined based on measures indicating student ability to effectively research community development issues and solutions. 80% of graduating students will have authored (or co-authored) and submitted two public research outputs (e.g., journal articles, book chapter, research briefs, research reports) for dissemination in professional or academic journals.

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		Master degree can expect to advance in their current jobs or move into more senior positions upon completion. The program is designed for mid-career professionals from across the country and around the world.		

Master of Professional Studies in Community Development Practice Watts College of Public Service and Community Solutions School of Community Resources and Development (Downtown Phoenix) 2019-2020	Yes $250 per credit hour	**Description and Justification:** The Master of Professional Studies (MPS) is a master's degree that combines the focused study of traditional graduate degrees (such as the Master of Arts or Master of Science) with specialized, industry-specific skills that can immediately be put to use in the workplace. The MPS in Community Development Practice is designed for aspiring professionals and includes direct experience gained through internships, fieldwork and a graduate project to complement classroom learning. It is distinguished from a) the more research-focused MS in Community Resources and Development currently offered, which is designed for those pursuing an academic career path, and also from b) the Executive Master in Community Development (on this plan), which is specifically designed for mid-career working professionals. The program focus is on how to plan, develop, implement, monitor and evaluate	**Learning Outcome 1:** Demonstrate a systematic and critical understanding of a substantial and complex body of knowledge at the frontier of community development ● **Concepts:** Participative democracy, sustainable development, human rights, economic opportunity, equality and social justice ● **Competencies:** Understand the values, processes and outcomes of community development; understand how to engage with communities; be able to develop and support collaborative working and community participation; ability to enable communities to take collective action, increase their influence and their ability to access, manage and control resources and services ● **Assessment Methods:** Final Project in CRD XXX: Theory and Practice of Community Development; students will be rated on their ability to critically assess a community development program Final project in CRD XXX, Advanced Concepts and Methods in Community Development; students will be rated on	45

community projects, in the context of policy analysis, program and project management and community/social research.

Market Need:
Graduates of the MPS in Community Development Practice will be prepared to work in the public, business, and non-profit sectors. They will also be qualified for various managerial positions such as program associates, development managers and grant coordinators. According to the U.S. Bureau of Labor Statistics, employment for social and community service managers is projected to grow at a rate of 10 percent between 2014 and 2024. Current Community Development and Community Economic Development salaries listed on Indeed.com range from $45,000 to $162,000. In the US, 32 universities offer graduate degree programs in Community Development; the University of Arizona offers a Master's of Development Practice. Students completing this degree could be expected to work in a variety of occupations from social and community service to real estate and property development.

their ability to critically assess a contemporary issue in community development studies.
- **Measure:** The curriculum will be refined based on measures indicating student ability to identify and understand the complex body of knowledge surrounding community development.

Learning Outcome 2: Demonstrate a range of analytical, creative, critical specialized research skills and be able to apply them to finding practical pathways in community development
- **Concepts:** Promoting diversity and inclusion (equity), building leadership and infrastructure, incorporating values into practice (ethics), ensuring participatory planning, learning for change, organizing for change, improving policy and practice, and building leadership and infrastructure
- **Competencies:** Ability to support people and organizations to learn together and to raise understanding, confidence and the skills needed for social change; ability to design and deliver practices, policies, structures and programs that recognize and respect diversity and promote inclusion; ability to facilitate and support organizational development and infrastructure for community development; ability to develop, evaluate and inform practice and policy for community development

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			• **Assessment Methods:** Final project in CRD XXX, Community Development Policy (elective course); students will be rated on policy critiques and research on constructing alternatives. • **Measure:** The curriculum will be refined based on measures indicating student ability to effectively research community development issues and solutions. 80% of graduating students will have authored (or co-authored) and submitted two public research outputs (e.g., journal articles, book chapter, research briefs, research reports) for dissemination in professional or academic journals.	
Doctor of Philosophy in Data Science, Analytics and Engineering Ira A. Fulton Schools of Engineering School of Computing, Informatics and Decision Systems Engineering (Tempe) 2019-2020	No	**Description and Justification:** With its programs in Computer Science, Computer Systems Engineering, Industrial Engineering and Software Engineering that cover data management, statistical modeling, optimization, and artificial intelligence and machine learning, the ASU School of Computing, Informatics and Decision Systems Engineering is in a unique position to offer graduate degrees in data science that span the spectrum from data acquisition to decision-making with a focus on data science, analytics and engineering. Our faculty base can propel this effort into a top 10 national program for this emerging area within a short time. We propose a program targeted towards data	**Learning Outcome 1:** Graduates will be able to identify open challenges, adapt, develop, and apply methods and tools from industrial statistics, operations research, machine learning, computer science, and computer engineering for problem description, system development, and prescriptive decision analysis. • **Concepts:** Program goals focus on enabling graduates to recognize opportunities, diagnose distinguishing characteristics of those challenges and then build, implement, maintain, and apply models and tools that can leverage existing data, create new knowledge, and make decisions for solving problems of societal interest. • **Competencies:** ○ Ability to develop, implement and apply algorithms for various	100

| | | scientists and engineers that will have analytical and computational depth and go beyond the business data analytics often offered through business schools to address issues related to managing and using data for discovery and prescriptive decision-making.

Market Need:
The U.S. Department of Labor Occupational Outlook Handbook (as of April 2018) lists statisticians, mathematicians, software developer (applications) and operations research analysts all among their top 20 fastest growing occupations for 2016-2026. The article, "The Quant Crunch: How the Demand for Data Science Skills is Disrupting the Job Market" (Burning Glass Technologies, 2017) mentions the significant growth of data-center skills in 2016 (Data Science: +40 percent, Data Engineering: +28 percent) and goes on to say that "advertised data scientist jobs pay an average of $105K and advertised data engineering jobs pay an average of $117K." Although there exists several graduate programs in Data Science, only a limited number are offered by ASU peers or ASU aspirational universities. This program will be backed by a strong and large faculty of computer scientists, computer engineers and industrial engineers and will produce graduates | data science tasks such as: prediction, classification, recommendations, pattern detection and grouping, anomaly detection, recognition, scoring and ranking, segmentation, and forecasting.
○ Ability to apply optimization and stochastic modeling techniques for abstraction of decision problems into quantitative models, validation of those models, solution of those models and sensitivity analysis for interpreting accuracy and implications of results; Understanding of the value of data and design of data systems;
○ Ability to develop original models and algorithms for data-driven decision making that address problem specific objectives and constraints.
● **Assessment Methods:** Student performance on the data analysis questions of their PhD comprehensive exam.
Student performance on the decision modeling and algorithmic section of the comprehensive exam.
● **Measures:** The curriculum will be monitored and refined based on student ability to apply the appropriate analytics for the available data and insights | |

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| | | with job prospects much beyond "data analysis" that involves computing, engineering, optimization and decision-making skills pre- and post-data analysis. | required for decision making.

Learning Outcome 2: Graduates will be able to utilize and manage large, heterogeneous data sets for discovery.
● **Concepts:** The student is expected to be proficient at the acquisition, management and use of data for descriptive, predictive and prescriptive analytical studies. This includes understanding the issues of economics, privacy, security and computational feasibility.
● **Competencies:**
  ○ Ability to create and evaluate models using large, heterogeneous data sets;
  ○ Understanding the value of data and information and the risks/ethics involved in acquiring, managing and using that data;
  ○ Understanding of big data systems, such as Hadoop, for data management and processing and ability to apply existing software tools for data management and analysis.
● **Assessment Methods:** Student performance in developing a data management plan for executing research as part of the dissertation.
● **Measures**: The curriculum will be monitored and refined based on student ability to manage big data sets and | |

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| | | | models in terms of security and computational feasibility. | |
| | | | **Learning Outcome 3:** Graduates will be able to develop original research ideas and effectively convey research results to a technical audience. | |

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Learning Outcome 3: Graduates will be able to develop original research ideas and effectively convey research results to a technical audience.

- **Concepts:** The graduate will be prepared for a successful career as a data researcher. They should be able to generate a research agenda, execute the technical portion of the research and then disseminate the results. In addition the graduate should be able to educate others on the specific methods and nuances of analytics and data science.
- **Competencies:**
  - Ability to identify feasible, original research ideas of measurable value to the body of knowledge;
  - Ability to present study results to both technical and managerial audiences at different levels;
  - Ability to develop educational materials that effectively convey opportunity and appropriate use of data science technologies to students and practitioners at different levels.
- **Assessment Methods**: Student performance on the written and oral Dissertation Proposal Defense. Student performance in completing and disseminating original research.

			PhD candidate performance on educational presentation. ● **Measures:** The curriculum will be monitored and refined based on student ability to communicate research ideas, research methods and findings to the academic and technical audiences to further depth of understanding in the field.	
Master of Education in Early Childhood Education Mary Lou Fulton Teachers College Division of Teacher Preparation (Tempe) 2020-2021	Yes $190 per course	**Description and Justification:** The Master of Education in Early Childhood Education will prepare individuals to meet the educational, social and emotional needs of children from birth through age eight. The program will offer two tracks: the master's degree for students who already have a teaching certificate or the master's degree and Arizona certification in early childhood education for students wanting to become licensed to teach children in public schools from birth through grade three. The MEd program in early childhood education has been offered as a concentration under the curriculum and instruction degree since fall 2008 with continually increasing enrollment, currently exceeding 200 active students. The proposed degree would replace the master of education in curriculum and instruction (early childhood education) degree and provide parity with the college's	**Learning Outcome 1:** National Association for the Education of Young Children (NAEYC) Standard 1: Students will demonstrate understanding of child development and learning and application to designing learning environments. ● **Concepts:** Students will learn the history of educational theories, constructs and frameworks as related to early childhood development. This knowledge will guide their ability to construct and evaluate quality learning environments. ● **Competencies:** Students will demonstrate their understanding of child development, learning processes, and best practices in designing quality learning settings by synthesizing research findings and other sources of evidence in order to create an early childhood instructional unit. Students will display their ability to integrate pedagogical skills with content knowledge in the design of an instructional setting that promotes whole-child learning opportunities. ● **Assessment Methods:** The ECD 505: Foundations of Early Childhood Education	250

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teacher preparation and certification programs that are degrees rather than concentrations (e.g., elementary education, secondary education, special education). Additionally, offering the program as a degree will align with labor market recognition of similarly named degrees as indicated through contact with professionals in the field and survey of competitive programs offered by other peer institutions of higher education.

Market Need:

With more than 28,000 unique postings nationwide (Emsi Analyst job posting data) in positions that include lead teachers, preschool teachers, certified teachers, Head Start teachers, and kindergarten teachers, the demand for early childhood educators demonstrates the nationwide need for educators qualified to work with young children in elementary and other early childhood settings. Top recent job postings provided by Emsi Analytics demonstrate the focus of the labor market on degrees titled "early childhood education" that address hard skills in lesson planning (identified in 31% of related job postings), child development (23% of related job postings), preschool education (17% of postings), and early childhood education (31% of postings). The Emsi

Signature Assignment is aligned with standards from the Interstate Teacher Assessment and Support Consortium (InTASC) (1b, 1f, 1k) and NAEYC. The Signature Assignment is an Issues Debate paper which requires the students to engage in discussions, selecting a current topic, researching the topic, formulating a professional viewpoint, taking a stance on the topic and debating it using a research stance.

The ECD 565: Instructional Methods in Early Childhood Signature Assignment is aligned to standards from InTASC (1a) and NAEYC (1a, 1b, 1c, 6a, and 4e). The signature assignment for ECD 565 is to develop an Integrated Thematic Unit. The purpose of the assignment is to design lessons around major themes, sub themes and smaller units while meeting cross-curricular learning standards.

- **Measures:** The curriculum will be refined based on students' measured ability to design learning environments based on best practices, and principles of child development and learning processes.

Learning Outcome 2: NAEYC Standard 4: Students will demonstrate that they understand the theories and research that support the importance of relationships and high-quality interactions in early education.

- **Concepts:** Students will learn about research-based findings that should be used to guide the instructional cycle.

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| | | inclusion of the position "early childhood special education teachers" as the fifth most frequently posted job title highlights the need for early childhood educators prepared to work with young children with or without disabilities or developmental delays. The program addresses typical and atypical growth and development and exceptional learners as an embedded part of the curriculum, threading information about children with disabilities across all courses in the program. | Many theories and theorists will be explored as the students evaluate the sources and identify ways the information can be used to design, implement, and assess quality interactions in the early childhood setting.
● **Competencies:** Students will conduct observations, analyze data obtained through the observations and learner work samples, and evaluate the results in relation to the research literature on high-quality interactions in early education. Students will determine the young learner's current performance level, integrate relevant references and resources into the evaluation, and provide evidence- and standards-based suggestions for future learning needs that address academic, social, and emotional domains.
● **Assessment Methods:** ECD 541--Signature Assignment Section 1 Descriptor: Analysis of the Child's Development (Aligned to InTASC; 6k, 6l and NAEYC 3b, 4a). ECD 541--Signature Assignment Section 2 Descriptor: Analysis of the Assessment Data/Impact of the Lesson (Aligned to InTASC; 6i. 6o. 6v, NAEYC: 4b).
● **Measures:** The curriculum will be monitored and refined based on students' expertise in understanding the theories and research that support the | |

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			importance of relationships and high-quality interactions in early education.	
Master of Science in Environmental Engineering Ira A. Fulton Schools of Engineering School of Sustainable Engineering and the Built Environment (Tempe) 2019-2020	No	**Description and Justification:** The growth in the MS in Civil, Environmental and Sustainable Engineering supports the establishment of an independent MS in Environmental Engineering degree with separate classwork and research tracks. This degree will be useful to recruit a broad range of ASU students including those in the 4+1 degree program, and allow us to narrow recruiting efforts for future students. The current MS degree in Civil, Environmental and Sustainable Engineering will remain for students interested in a broad interdisciplinary MS program, while the new MS in Environmental Engineering will focus on environmental processes; air, land and water systems engineering; and environmental chemistry and microbiology. The MS in Environmental Engineering program provides a natural pathway into graduate school for students enrolled in the BS program in Environmental Engineering. Many students in a variety of disciplines are concerned about the environment and would like to obtain advanced education in environmental engineering. Students with undergraduate degrees in Chemistry, Biology, Molecular Sciences, Chemical	**Learning Outcome 1:** Graduates of the MS Environmental Engineering program will be able to evaluate complex environmental problems from conflicting perspectives and assumptions. ● **Concepts:** Environmental engineers utilize key terminology and concepts in environmental chemistry, environmental microbiology, and risk management to recommend solutions. ● **Competencies:** Students will demonstrate understanding of fundamental concepts related to physical, chemical, and biological processes. ● **Assessment Methods:** Written comprehensive examination, Applied Project, or Thesis assessed via analytic rubric ● **Measure:** The curriculum will be refined based on measures indicating student ability to demonstrate advanced understanding of scholarly learning in their specialty area in environmental engineering. **Learning Outcome 2:** Graduates of the MS Environmental Engineering program will be able to propose and defend engineering solutions to environmental problems consistent with current theoretical foundations to relevant audience. ● **Concepts:** Environmental engineers employ technical writing, oral communication, and appropriate	50

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		Engineering, and Biological and Health Systems Engineering would likely be interested in a degree that provides advanced training in environmental engineering. Rather than pursue a degree in Civil Engineering, these students are more likely to be drawn towards a degree in Environmental Engineering. This promotes and advances trans-disciplinary dialogue in the School and enriches the student's educational experience. Students will be advised by faculty mentors with respect to appropriate prerequisites that they need to take to pursue the MS in Environmental Engineering. **Market Need:** Environmental engineers incorporate the principles of chemistry and microbiology with engineering processes in order to produce potable water and treat wastewater, remediate contaminated soil and sediment, manage solid and hazardous waste, monitor air quality, and implement air quality control devices. Graduates with a master's degree in Environmental Engineering pursue careers in engineering consulting, project management and execution, and design of facilities and environmental treatment processes. They serve as environmental engineers within industry, water project managers, and	principles for visualizing information and data. ● **Competencies:** Students will demonstrate the ability to communicate environmental engineering concepts that are correct and appropriate for the audience. ● **Assessment Methods:** Presentation in ENG XXX will demonstrate mastery of environmental engineering concepts and effective communication skills scored using an analytic rubric. Graduates will be employed in an area of environmental engineering by way of private industry, research or government lab, or university setting utilizing the knowledge and skills acquired in the program or are accepted for further graduate study in environmental engineering using the knowledge and skills acquired in the program. ● **Measure:** The curriculum will be refined based on measures indicating student ability to emphasize the engineering of natural and built environments to enhance the human condition.	

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		environmental health and safety professionals. The U.S. Bureau of Labor Statistics projects an 8% increase in employment of environmental engineers over the next decade. The U.S. Bureau of Labor Statistics reports that median salary for environmental engineers was $86,800 in 2017. However, environmental engineers coming out of the proposed degree program will have much broader employment prospects than traditional environmental engineers. Given ASU's emphasis on addressing grand challenges, bringing about quantum leaps in sustainability, and advancing solutions to global climate change, environmental engineers trained in this program will have a broad array of opportunities that go well beyond the classic definition of an environmental engineer. Environmental challenges being faced today are increasingly complex and require advanced/specialized educational experiences that can be delivered effectively in the context of a dedicated environmental engineering degree.		

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Doctor of Philosophy in Geographic Information Science College of Liberal Arts and Sciences School of Geographical Sciences and Urban Planning (Tempe) 2019-2020	No	**Description and Justification:** The PhD in Geographic Information Science (GIS) will foster training of next generation scientists and engineers who will excel at theoretical, computational, analytical and technical knowledge in transdisciplinary geospatial sciences. Recent advances in location-based big data acquisition using remote sensing, Internet of Things, drones, and citizen sensors have created tremendous demand for a workforce to solve unique challenges across spaces and places, and to develop new ways of analyzing geospatial big data to support decision-making in smart city designs, disaster resilience, precision agriculture, public health, homeland- and cyber- security, refugee operations and environmental management. This exciting field sits in the heart of Science, Technology, Engineering and Mathematics (STEM) education, the enhancement of which will undoubtedly retain the international competitiveness and impact of ASU and its students. This new degree program will also play a key role in achieving ASU's mission of becoming "a global center for interdisciplinary research, discovery and development."	**Learning Outcome 1**: Graduates of the Geographic Information Science PhD program will be able to analyze and isolate the spatial properties that can produce insight for decision making. ● **Concepts:** Recognize that spatial processes are distinct from a-spatial processes and that the nature of geographical space adds complexity and challenges to our understanding of the world. Consequently, recipients of the degree will demonstrate their knowledge of geography and geographical processes and their ability to understand the complexity of spatial vs a-spatial problems. ● **Competencies:** Spatial data collection procedures, use of Geographic Information Science tools (e.g. ARCGIS, QGIS, map data), and crafting spatially-explicit research questions. ● **Assessment Methods:** The first question of the written comprehensive examination and the oral defense of this question will evaluate the student's ability to think spatially. ● **Measure:** The curriculum will be refined based on measures indicating student ability to demonstrate their knowledge of geography and geographical processes and their ability to understand the complexity of spatial vs a-spatial problems.	9

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		Market Need:	**Learning Outcome 2:** Graduates of the	

Market Need:
Only four PhD programs focused exclusively on geographic information science exist in the US. Forty-three geographic information science faculty positions became available recently (http://www.indeed.com). According to private research, the geographic information science industry grew in the double digits in 2010 and another 8 percent in 2011. The Bureau of Labor Statistics' 2010-2011 Handbook reported skilled geographic information science workers have "favorable job prospects." The US Department of Labor's High Growth Industry Profile -- Geospatial Technology report, described the geospatial market as "growing at an annual rate of almost 35 percent, with the commercial subsection of the market expanding at the rate of 100 percent each year." According to the American Association of Geographers, median annual salary for geospatial information scientists and technologists has increased from $79,000 in 2010 to $83,000 in 2014. Geographic information science theory, tools, computational procedures, models, and techniques engage several critical elements in STEM curriculum and instruction.

Learning Outcome 2: Graduates of the Geographic Information Science PhD program will be able to demonstrate analytical, statistical, and computational skills for analyzing geospatial data.

- **Concepts:** Solve complex spatial problems through computational, statistical and mathematical skills applied to spatial problems. Apply data science approaches to spatial data.

- **Competencies:** Spatial statistics, Geographic Information Science programming, geo-statistics, remote sensing, handling big data.
- **Assessment Methods:** Students will answer a technical question as part of their comprehensive exam.
  Students will take a technical course on GIS and the culminating project will be assessed on a faculty developed rubric that assesses the application of statistical methods to a geospatial problem.
- **Measure:** The curriculum will be refined based on measures indicating student ability to demonstrate analytical, statistical, and computational skills for analyzing geospatial data.

Learning Outcome 3: Graduates of the Geographic Information Science PhD program will be able to demonstrate an understanding of where the research frontiers are in geographic information science.

			• **Concepts:** Demonstrate that, although the student's research is based on previous research, it extends our current knowledge and therefore contributes significantly to geographic knowledge. Able to identify geographic information and knowledge needs that are cutting edge.	
			• **Competencies:** Conduct review and synthesis of geographic literature. Be able to communicate (via writing and oral presentation) clearly about geographic research frontiers.	
			• **Assessment Methods:** For the culminating assignment, students will situate their research within frontiers of GIS during GCU 585 Research Design and Proposal Writing assessed using a graded rubric. Students will present research addressing knowledge gaps in GIS at an academic conference.	
			• **Measure:** The curriculum will be refined based on measures indicating student ability to demonstrate an understanding of where the research frontiers are in geographic information science.	

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| Master of Global Leadership and Strategy

Thunderbird School of Global Management

(Downtown Phoenix)

2019-2020 | Yes

$2,500 to $3,400 per credit hour | **Description and Justification:** Globalization, economic change, more stringent regulations and tougher governance make realizing stakeholder value increasingly difficult. Private and public businesses, nongovernment organizations and government institutions must have a visible pipeline of high-potential individuals "in waiting" for senior leadership and executive positions. These leaders must be developed to engage globally, value entrepreneurship and transform society (ASU's design aspirations). The senior leaders of the future may have ambition and talent, but these alone do not ensure success in senior leadership positions. To succeed as senior leaders, these individuals with high-potential must be given the right set of conditions and support to develop. These include international exposure to develop a global mindset, geopolitical savvy and cross-cultural agility; broad strategic thinking experiences and stretch to develop emotional intelligence; judgement and learning agility to lead in senior and executive positions. The Master of Global Leadership and Strategy develops leaders who can design and create solutions to contemporary global challenges.

Market Need: | **Learning Outcome 1:** Graduates will demonstrate the ability to build sustainable trusting relationships based on respect and openness for other cultures with others from diverse parts of the world.
Concepts: Graduates will employ knowledge of global organizations, private and public sector organizations, global industries, global value networks and cultural complexities. **Competencies:** Students will develop a Global Mindset which comprises knowledge of global organizations, global industries, global value networks and cultural complexities. Students will be able to build sustainable trusting relationships with others from diverse parts of the world and exhibit passion, excitement, respect, flexibility and openness towards other cultures. **Assessment Methods**: A Global Mindset Inventory pre- and post-test will be administered to each student in the program upon entry in an introductory class and prior to graduation in a capstone class to assess development in the graduate's ability to think with a Global Mindset as measured using the validated Global Mindset Inventory instrument. Development will be measured along three factors: Intellectual Capital, Cultural Capital, and Social Capital. Graduating students will evaluate the quality of the program's ability to enhance Global Mindset. | 50 |

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		The largest readiness gap for organizations around the world is a shortage of senior leadership talent. Emsi labor market analysis (2016, 2017) identified a 10 percent growth in managerial and executive jobs that require leadership, critical thinking and project management skills. Deloitte found that only 14 percent of global firms were doing an excellent job of senior leadership development; 85 percent were doing an inadequate job. Grant Thornton and the Conference Board identified similar gaps. Successful senior leaders need much more than business skill mastery; they need to be globally sophisticated, innovative, curious and able to make rapid decisions. Most organizations are "redesigning their entire strategy for leadership development, driving deeper skills faster, developing leaders globally, and building leadership on a continuous basis." The Master of Global Leadership and Strategy is designed to accelerate the career trajectory of high potential individuals to fill the global senior leadership pipeline talent gap.	● **Measures:** The curriculum will be refined based on students' growth on the Global Mindset Inventory and weaknesses identified by students. **Learning Outcome 2:** Students will demonstrate the ability to engage globally, manage the tradeoffs and tensions encountered by leaders in the global context, and deal with the paradoxes and fast-paced change in the global context through their enhanced leadership versatility. ● **Concepts:** Students will navigate trends of globalization, economic change, regulation and governance and their impacts on global stakeholder relationships and entrepreneurship. ● **Competencies:** Students will demonstrate leadership versatility—the ability to deal with fast-paced changes encountered in the global environment. Students will demonstrate the ability to adjust their behavior and apply the right leadership approach for the circumstances at hand in a variety of global contexts. ● **Assessment Methods:** Students will be assessed in their ability to meet the leadership versatility criteria utilizing the Leadership Versatility Index, a validated scale that identifies strengths and weaknesses, ability to manage global leadership tensions and tradeoffs, and mastery of opposing leadership forces need to deal with paradox and fast-paced	

			change encountered in the global environment. This assessment will be administered in their first Leadership class at the beginning of the program and as a post-test in their final course before graduation. Graduating students will evaluate the program's ability to enhance Global Leadership. ● **Measures:** The curriculum will be refined based on students' growth in Leadership Versatility and weaknesses identified by students in this area of the training.	
Master of Science in Health Care Simulation College of Nursing and Health Innovation (Downtown Phoenix) 2019-2020	Yes $107 per credit hour; cap at $750.	**Description and Justification:** The expanding use of simulation education in health care settings demonstrates the need and opportunities to educate innovative leaders in experiential teaching strategies. Simulation in health care education improves competencies in communication, teamwork, critical thinking, professional identity and safety. The simulated learning environment provides a psychologically safe space where students can make mistakes without risk to real patients. Evidence-based standards are used in scenario design, replicating real patient experiences with life-like high-fidelity computer manikins or standardized patients (trained actors). Students complete core courses then choose electives to maximize their individual learning needs. The courses which	**Learning Outcome 1:** Demonstrate the ability to influence the design, operations, and evaluation of educational health care simulation in academic and/or practice settings. ● **Concepts:** Graduates of the MS in Health Care Simulation program will demonstrate expertise in process improvement and strategic planning applied to healthcare simulation in the academic and/or practice setting(s). ● **Competencies:** Students will demonstrate competence in the use of strategic planning systems and infrastructures to support and maintain operations (International Association for Clinical Simulation and Learning (INACSL) 1 Operations Standard; SSH2 Core Standards). ● **Assessment Method:** In NUR XXX: Simulation Practicum Advanced, Simulation Program Process Improvement Oral Presentations will be	30

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comprise this program will provide students the opportunity to learn and work with their peers, faculty and leaders from multiple disciplines, including academia, health care, sociology, technology, the arts and public policy. Students will work collaboratively to identify and develop strategies and solutions to health care and community-based health challenges through simulation and experiential education.

The Arizona Board of Nursing Advisory Opinion authorized the use of up to 50 percent of clinical experiences can be simulated using evidence-based practices and qualified faculty. The foundation of this opinion is based on the National State Board of Nursing Simulation Study in 2012.
https://www.ncsbn.org/JNR_Simulation_Supplement.pdf

Market Need:
The MS in Health Care Simulation will target interprofessional educators and practitioners seeking operational and leadership expertise to be innovative change agents in academic or health care simulation settings. The 2016 National League for Nursing Biennial Survey suggests 43 percent of surveyed individuals identified lack of clinical placements and 33 percent of qualified

assessed against a faculty developed rubric that measures process improvement and application of strategic planning to health care settings.
In NUR XXX: Capstone, Strategic Plan Written Projects will be assessed against a faculty developed rubric that measures process improvement and application of strategic planning to health care settings.
- **Measures:** The curriculum will be monitored and refined based on student ability to articulate principles of design, operations and evaluation for educational healthcare simulations.

Learning Outcome 2: Demonstrate the ability to provide health care simulation program leadership and oversight associated with fiscal management, physical space, equipment, and personnel resource operations.
- **Concepts:** Graduates of the MS in Health Care Simulation program will demonstrate expertise in health care simulation leadership skills and operational perspectives.
- **Competencies:** Students will demonstrate competencies in Leadership, Financial, Human Resource, Capital Equipment, Disposables Management, and Space Allocation essential to Healthcare Simulation Program (INACSL1 Operations Standard).
- **Assessment Methods:** In NUR XXX: Simulation Practicum 1, Preceptor Observation Written Journals will be

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		applicants are turned away due to faculty shortage. The College of Nursing and Health Innovation Simulation Learning Resources program at ASU currently operates over 80,000 student hours per year. The nationwide nursing shortage decreases the number of qualified nurse educators with additional stress on simulation educators. The MS in Health Care Simulation can help fill the gap so that we can produce more quality nurse graduates for Arizona. There are two other comparable academic programs in the country (Drexel and the University of Central Florida).	assessed against a faculty developed rubric that measures application of leadership and management principles. In NUR XXX: Educational Simulation Methods, Written Scenario Development Assignments will be assessed against a faculty developed rubric that measures application of leadership and management principles. ● **Measures:** The curriculum will be monitored and refined based on student ability to critique and defend the management of physical space, equipment, personnel, and other operational perspectives.	
Master of Science in Innovation and Venture Development Herberger Institute for Design and the Arts The Design School (Tempe) 2019-2020	Yes $270 per credit hour; max $2425	**Description and Justification:** Over the past decade, there has been a growing recognition of the value of design thinking in innovation and business circles. This program capitalizes on this fact and ensures that graduates will gain enhanced terminal competencies that organizational leaders will need to be successful in their careers. The new multi-disciplinary Master of Innovation and Venture Development will prepare students to become the next generation of strategic thinkers and leaders equipped with a unique set of skills in design thinking, innovation	**Learning Outcome 1:** Students graduating from the program will demonstrate the practical application of lean startup methodologies including customer discovery/development, data collection and analysis, prototyping, experimentation, business modeling, value proposition development along with supply chain awareness. ● **Concepts:** Students will obtain the knowledge and skills (design thinking, innovation process, business strategy, and technology management) to recognize, implement, and analyze solutions for managing the business lifecycle across agile project developments.	75

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		process, business strategy, technology management and sustainability issues. Graduates from this program will be armed with the knowledge and skills to recognize, analyze, visualize and implement solutions for the complex global challenges we will face in the future. This degree utilizes a venture-based learning model, in which students will have the opportunity to learn by participating in cross-functional teams on meaningful and challenging projects, sourced from the business community. **Market Need:** Emsi reports confirmed our program matches the skills sought by local and national employers, showing positive growth trend for jobs utilizing this skill set between 2017 and 2022 both regionally (+13.4%) and nationally (+10%). In Arizona, job postings with these competencies include: Anthem, Oracle, Honeywell, Accenture, Raytheon, Godaddy, and Aetna. Job titles include: Business Development Manager, Corporate Vice President, Product Manager, Engineering Manager and Design Director. WPC benchmarked competitive offerings from other U.S. Universities. The results show this collaborative degree would be unique and in the vanguard of interdisciplinary programs.	● **Competencies:** Students will be able to define product /service requirements and identify needs through customer discovery whilst developing innovation and entrepreneurship literacy through venture-based learning within a startup studio environment. ● **Assessment Methods:** Students will successfully complete a detailed new business proposal of a startup product or service project and present to the faculty committee and/or external panel in the studio courses (DSE 520 and DSE 580). Students in DSE XXX will demonstrate the ability to create a new product or service via the establishment or advancement of an internal or marketplace-focused team-based venture. ● **Measure:** The curriculum will be refined based on areas of weakness of and strength as indicated by measures of practical application of lean startup methodologies (e.g. customer discovery/development, data collection and analysis, prototyping, experimentation, business modeling, value proposition development). **Learning Outcome 2:** Students will demonstrate active project management skills to evaluate current issues, problems or opportunities for the organization and the successful project launch. ● **Concepts:** Using Design Strategies, students will successfully implement a Lean Startup incorporating cross	

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		Companies hiring graduates from collaborative degree programs include: Amazon, Apple, Boston Consulting, Cisco, Deloitte, EBay, Glaxosmithkline, Google, GoPro, IBM, IDEO, Intel, John Deere and others. We conducted qualitative research through a series of 14 interviews with executives and managers at companies with significant operations in Arizona. Feedback was overwhelmingly positive to the concept of a venture-based interdisciplinary degree.	discipline approaches and multiple systemic viewpoints. ● **Competencies:** Students will exercise critical thinking skills while utilizing Risk and Failure Mode Analysis along with project Gantt Charting to map out critical milestone requirements and increase start-up implementation success. ● **Assessment Methods:** Success will be measured through the practice and process of innovation and critical thinking in the context of Creative Design Thinking (Innovision). Using a program-long portfolio, various milestone activities in relation to strict adherence to an established Gantt chart will be periodically monitored and assessed at the end of DSE XXX using a faculty-developed rubric. ● **Measure:** The curriculum will be refined based on measures indicating student ability to demonstrate critical thinking and innovation skills to evaluate current issues, problems and opportunities in a venture. **Learning Outcome 3:** Students will work effectively within a multidisciplinary development team and external stakeholders to identify issues and opportunities, solve problems, and create high value products or services. ● **Concepts:** By applying metrics that represent multidisciplinary milestones	

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			and ROI thresholds that are paramount to 'managing' the process and working with a seasoned 'network' of advisors, investors, business consultants, students will increase likelihood of lean start-up success. ● **Competencies:** Participating students will progress in their cross discipline awareness of each other's business, engineering, manufacturing and design awareness competencies. ● **Assessment Methods:** Students will demonstrate the ability to successfully form and manage multi-disciplinary operating teams or start-up entities, and learn the importance of human capital, as demonstrated by establishing a successful start-up company or be judged by faculty as qualified to establish a start-up. ● **Measure:** The curriculum will be refined based on measures indicating student ability to work effectively within a multidisciplinary development team and external stakeholders to identify issues and opportunities in venture development.	

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| Master of Arts in International Affairs and Leadership

College of Liberal Arts and Sciences

School of Politics and Global Studies

(Tempe)

2019-2020 | Yes

$287 per credit hour | **Description and Justification:**
The MA in International Affairs and Leadership will leverage the McCain Institute's deep international affairs experience and ASU's unmatched academic scope. This program would be an investment in a long-term, education-focused enterprise that would combine the university's academic capacity and visibility of the new Washington Center with the McCain Institute's connectivity in Washington and emphasis on leadership.
Based in Washington, students will be exposed to and interact with senior government, private-sector officials, and international top decision-makers. Experiencing academic theory in action will provide students a distinctive edge as they approach graduation and seek job opportunities.
As an innovative institution entering this market, ASU could establish a program that surpasses D.C.-based international affairs programs with particular emphasis on the practical applications of international affairs education and hands-on experience as part of the curriculum while coming in at a substantially lower cost.

Market Need:
According to a 2014 Forbes article, master's degrees in International | **Learning Outcome 1:** Graduates of the program will be able to clearly analyze challenges in international affairs, articulate the development of relevant U.S. foreign policy, and demonstrate its practical application and implementation in the field.
● **Concepts:** Critical thinking and analysis in reality-based international affairs scenarios; Effective verbal and written communication in the relevant professional setting; Foreign language proficiency; Sophisticated understanding of the multiple layers of government and private sector resources available to foreign policy decision-makers.
● **Competencies:** The ability to collect and synthesize relevant information to make a knowledgeable decision with an actionable result. Effective, sharply focused public speaking and written communications skills to convey a clear and purposeful message in an international context. Advanced ability to operate professionally and achieve results in unfamiliar cultural settings.
● **Assessment Methods:** In a final presentation (Applied Leadership Project), we will examine the level and sophistication of reality-based research and proposed policy recommendations that demonstrate a clear understanding of the multiple available levers of national power and their appropriate deployment for achieving national security goals. | 50 |

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| | | Relations rank as the fifth best degree for jobs with a projected employment increase for jobs associated with this degree. Emsi data further supports this claim, showing that careers related to international affairs such as business operations specialists, security managers, and intelligence analysts are on an upward trend and projected to increase by 120,000 by 2023. The Washington DC market has four well-established and well-known international affairs programs: The Elliott School at George Washington University (GW); Johns Hopkins School of Advanced International Studies; American University's School of International Service; and Georgetown University's School of Foreign Service. George Mason University recently decided to increase its offerings in this area as well. All programs are private institutions with high tuition with traditional academic programs resting on their strong reputations, rather than the kind of dynamic innovation characteristic of ASU. Of the four, only GW has displayed a strong sense of innovation and willingness to emphasize practical applications beyond the general academic curriculum. There is a need for a new program in the international affairs space that breaks away from the traditional academic structure. The | Students will present detailed, reality-based policy recommendations as a result of their research, synthesized in their final presentation (Applied Leadership Project), before a panel of foreign policy experts to defend their recommendations.
● **Measures**: The curriculum will be monitored and refined based on measures of student ability to collect and analyze relevant information, critically analyze challenges in international affairs, articulate the development of relevant U.S. foreign policy in verbal and in written form, and demonstrate its practical application and implementation in the field.

Learning Outcome 2: Graduates of the program will be able to clearly evaluate foreign policy challenges and apply effective diplomatic negotiating strategies and tactics to achieve positive outcomes.

● **Concepts:** Negotiation; Conflict resolution; Adaptability in diverse negotiating environments; basic concepts of international law and the variety of culturally influenced negotiating styles.

● **Competencies:** The ability to navigate the complex foreign policy landscape. Convening authority to explore a diversity of opinions and to resolve differences. Understanding and deploying diplomatic | |

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		McCain Institute aims to provide an innovative international affairs program providing a practical, hands-on curriculum led by Professors of Practice at a substantially lower cost than competitors.	protocol to achieve negotiation outcomes. Identifying and effectively interacting with the diverse players and their agendas operating in the international environment. ● **Assessment Methods:** In action teams, students will participate in active simulation exercises and produce a collective policy document reflecting lessons learned that demonstrate their understanding and ability to achieve positive outcomes in a challenging international setting. Students will be required to articulate their policy choices and negotiating strategy and to justify verbally and in writing the expected impact and consequences of their policy recommendations. Students will participate in weekly group discussion panels where they will discuss the current policy environment, analyze and assess negotiation strategies based on previous class lectures and readings, and propose next steps in advancing a complex set of interwoven policy objectives. ● **Measures**: The curriculum will be monitored and refined based on measures of student understanding of basic concepts of international law and the variety of culturally influenced negotiating styles; ability to articulate their policy choices and negotiating strategy and to justify verbally and in writing the expected impact and	

consequences of their policy recommendations; and their ability to evaluate foreign policy challenges and apply effective diplomatic negotiating strategies and tactics to achieve positive outcomes.

Learning Outcome 3: Graduates of the program will have a sophisticated understanding of character-driven leadership and its role in a highly complex international environment, incorporating critical thinking, complex problem solving, and building of professional relationships with international partners as well as adversaries.

- **Concepts:** Ethical reasoning. Values based decision making. Formation of the foundation of trust. Networking in an international environment. Understanding of the power and influence of traditional and modern media.
- **Competencies:** Employing diplomacy skills inside and outside of traditional diplomatic discourse. Leading teams to find creative solutions to challenges in violent, uncertain, complex and ambiguous international settings. Comprehension and successful application of leadership principles based on values, ethics, and character. Ability to establish and lead formal and ad-hoc teams composed of diverse international team members.
- **Assessment Methods:** Students will produce a Final Presentation (Applied

			Leadership Project) on a leadership challenge in which they will be required to propose a comprehensive leadership solution, including an impact assessment and benchmarks to measure success. Students will defend their Applied Leadership Project, ready for implementation, before a panel of experts. ● **Measures**: The curriculum will be monitored and refined based on measures of student ability to understand character-driven leadership and its role in a highly complex international environment, incorporate critical thinking, complex problem solving, and the building of professional relationships to propose a comprehensive solution to a leadership challenge, including an impact assessment and benchmarks to measure success.	
Master of Arts in Investigative Journalism Walter Cronkite School of Journalism and Mass Communication (Downtown Phoenix) 2019-2020	Yes $1,000 per semester	**Description and Justification:** Investigative journalism, focused on holding the powerful accountable through highly specialized reporting, has played an increasingly vital role in American life since the Vietnam War and Watergate. It exposes corruption and points toward solutions in government, business, law enforcement, health, education, the environment and other areas. In existing Cronkite School programs, students and faculty have produced	**Learning Outcome 1**: Graduates will demonstrate the ability to conduct and critically evaluate research required for investigative journalism. ● **Concepts:** Graduates in the MA in Investigative Journalism program will learn cutting-edge reporting and research techniques drawn from a wide array of academic disciplines. Graduates of the program must be nimble in applying a range of techniques in reporting specific stories and evaluating relevant research produced by other sources.	45

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award-winning investigative reporting that prompted policy changes and regulatory action in Arizona and beyond.

Now the Scripps Howard Foundation has awarded the Cronkite School $3 million to create the first-in-the-nation MA in Investigative Journalism -- leveraging expertise from across the university in interdisciplinary collaboration and bringing unprecedented focus and funding to this field.

The work of Investigative Journalism students, during and after the program, will unearth information vital to our democracy, aligning with several ASU Design Aspirations: transforming society, conducting use-inspired research, fusing intellectual disciplines, being socially embedded and enabling student success.

Market Need:

Investigative journalism is a highly competitive and specialized field. According to Emsi Analyst, the number of active postings listing "investigative journalism" as a hard skill tripled from approximately 150 in September 2016 to approximately 450 in June 2018. During this period, top newsrooms posted more than 2,000 unique jobs in investigative journalism. Meanwhile, employers report challenges in hiring

- **Competencies**: Graduates will apply a variety of strategies and tactics in interviewing sources, gathering and analyzing quantitative and qualitative data, accessing government data and understanding historical context.
- **Assessment Method:** In their capstone experience (MCO 570), students will produce a professional-level investigative reporting project and will present their work to a panel of experts from inside and outside the Cronkite School. Members of each panel will evaluate their work using a rubric of professional standards on a variety of measures. Throughout the program, students are required to conduct primary and secondary research to inform reporting using a combination of qualitative and quantitative methods. This research is included in individual online portfolios of work completed over the course of the program. The school will work with external industry leaders to evaluate a sample of these portfolios and ask evaluators whether the portfolios demonstrate the ability to conduct and critically evaluate research required for investigative journalism.
- **Measures:** The curriculum will be monitored and refined based on student ability to effectively employ reporting techniques and substantively evaluate research from primary and secondary

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| | | journalists with the training required to excel in this area. No journalism school in the country offers a graduate degree in investigative journalism, and newsroom leaders world-wide who were surveyed by the Google News Lab in 2017 reported that they did not have the resources to teach the requisite skills in house.

Carolyn Ryan, The New York Times editor in charge of recruiting, called the market a "ferocious battle for investigative talent." She told the Poynter Institute, "It's the most intense I've ever seen, and I've been hiring reporters for a long time."

This new degree program will bring together students from a range of disciplines and provide complementary skills required for cutting-edge investigative reporting, preparing graduates to excel in this competitive industry while serving newsrooms and communities around the globe. | sources.

Learning Outcome 2: Graduates will demonstrate the ability to find and develop original story ideas into full investigative reporting projects worthy of professional publication and distribution.
● **Concepts:** Investigative reporters distinguish themselves by unearthing stories that were previously unreported and then developing them to be thorough, well-documented and complete investigations. Graduates of this program must be able to demonstrate that they can do that at a professional level.
● **Competencies:** Students will demonstrate skill in applying a variety of strategies and tactics to find and develop investigative reporting projects, including interviewing, source development, data collection and analysis, and qualitative research, while applying the values of journalistic news judgement.
● **Assessment Methods:** Throughout the program students will be challenged to find and develop story ideas into investigative projects. They will compile the final projects into an portfolio, and the Cronkite School will work with outside industry leaders to evaluate those portfolios against a rubric of professional standards.
Throughout the program students will be encouraged to publish or broadcast their | |

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			investigative reporting projects with professional news outlets. ● **Measures:** The curriculum will be monitored and refined based on student ability to recognize reporting avenues that can be further investigated for development into full reporting projects. **Learning Outcome 3**: Graduates will demonstrate the ability to gather, analyze and communicate diverse viewpoints to journalistic audiences in ethical and responsible ways ● **Concepts:** Students of the MA in Investigative Journalism program must demonstrate competency in and commitment to inclusion and the highest standards for journalistic ethics. ● **Competencies:** Students will demonstrate that they can identify key stakeholders to share viewpoints on a particular topic, use responsible and ethical techniques of gathering these viewpoints and effective strategies for communicating these viewpoints according to the principles of the Society of Professional Journalists Code of Ethics. ● **Assessment Methods:** Students will create a portfolio of their work over the course of the degree program. The Cronkite School will work with external industry leaders to evaluate a sample of these portfolios using a rubric of professional standards in determining the extent to which their work demonstrates	

			critical evaluation of and integration of diverse viewpoints. Students are required to understand and apply the Society of Professional Journalists Code of Ethics in every class and assignment at the Cronkite School. The school will work with external industry leaders to evaluate a sample of student portfolios using a rubric of professional standards in determining the extent to which their work demonstrates reporting consistent with the ethics of the profession. ● **Measures:** The curriculum will be monitored and refined based on student ability to ethically represent and articulate differing viewpoints to audiences. **Learning Outcome 4**: Graduates will demonstrate skills in using multimedia storytelling techniques to distribute the results of their investigations through media appropriate to each story. ● **Concepts:** Students in the MA in Investigative Journalism program will produce investigative journalism stories on digital, social and broadcast platforms. Graduates of the program must demonstrate that they can use the tools and techniques that are most appropriate and effective for communicating the findings of their investigations. ● **Competencies:** Students will use journalistic writing, data visualization, audio production, photography and/or	

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			videography in communicating their findings. ● **Assessment Methods:** In their capstone experience (MCO 570), students will produce a professional-level investigative reporting project and will present their work to a panel of experts from inside and outside the Cronkite School who will evaluate their work using a rubric of professional standards on a variety of measures. Throughout the program, students will compile a portfolio of their investigative work and multimedia storytelling. The Cronkite School will work with external industry leaders to evaluate a sample of these portfolios using a rubric of professional standards on a variety of measures. ● **Measures:** The curriculum will be monitored and refined based on student ability to employ the appropriate material and evidence in the appropriate format for each reporting investigation.	

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Master of Arts in Language Teaching	No	**Description and Justification:**	**Learning Outcome 1:** Graduates of the MA in	20
College of Liberal Arts and Sciences School of International Letters and Cultures (Tempe) 2019-2020		In an increasingly global world and an increasingly linguistically diverse nation, knowledge of a second language is increasingly important. In Arizona, the need for language teachers has reached a crisis point, and many classrooms are without teachers. In an effort to address the crisis, the Arizona Department of Education has changed its requirements to allow those with a Bachelor of Arts in a field, "subject experts," to teach. With the MA in Language Teaching, we hope to assume a fundamental responsibility for the economic, social, and cultural health of Arizona by providing graduate training specifically in language teaching to those who already possess the linguistic skills. Currently, ASU does not provide a MA degree in language teaching. The proposed program is designed to build on existing graduate coursework on the following languages: Spanish, French, Chinese, Japanese, and German. These are also, with the possible exception of Japanese, languages that are currently taught in the majority of schools. **Market Need:** According to the American Council on the Teaching of Foreign Language, the main national professional organization for language teachers, "For the third	Language Teaching will be able to recognize and apply current second language acquisition theoretical concepts and pedagogical practices in the area of language teaching and learning. ● **Concepts:** Students will learn research based principles of Second Language Acquisition (SLA) and the appropriate linguistic terminology to describe language. ● **Competencies**: Students will be able to evaluate the results of research in second-language acquisition in order to determine the best ways to apply SLA research to language pedagogy. ● **Assessment Method:** Sample lesson plans in SLC 596: Second Language Acquisition Methodologies will demonstrate the application of at least two second language acquisition theories and their resulting pedagogical applications. Discussion board assignments on current theoretical and pedagogical issues in Second Language Acquisition in SLC 596: Second Language Acquisition Methodologies. All required discussion posts will be evaluated using a grading rubric for the students' use of theoretical concepts. ● **Measures:** The curriculum will be monitored and refined based on students' ability to articulate the pedagogy and theoretical foundations for second language acquisition through	

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year in a row, more than 40 states plus the District of Columbia have reported a teacher shortage in world languages, an all-time high for the subject area since the Department of Education began collecting data over 25 years ago. In the report, language teaching vacancies are at the top of the list next to other key subject areas like math, science, and special education". Emsi data suggest there are currently no competitor programs in Arizona for an MA in Language Teaching. These data show that in 2017, there were 16,346 jobs in the region (8,176 in secondary schools and 8,170 in postsecondary institutions). Out of the 16,346 individuals holding these positions, only 1,518 have earned a master's degree, leaving a large number of potential students for the MA in Language Teaching. In terms of new vacancies, there were 58 unique job postings from October, 2017, to September 2018, at the university, community college, and secondary school levels.
The MA in Language Teaching degree would be the only one in Arizona to be offered in languages other than Spanish. Currently, the University of Arizona does not offer a MA in Teaching Languages and Northern Arizona University offers one online program in Spanish only. The target

conversation and lesson plan development.

Learning Outcome 2: Graduates of the MA in Language Teaching will be able to critically evaluate published evidence from research and practice studies.
- **Concepts:** Students will study and learn various Principles of Language pedagogy, including the most important methods that have been developed over the years. They will also learn the appropriate linguistic terminology to describe language and language development.
- **Competencies:** Students will be able to read and evaluate results of research in second-language acquisition in order to develop appropriate curricula for second language classes.
- **Assessment Methods:** Research paper in SLC 596: Second Language Acquisition Methodologies, whereby students show evidence of a solid understanding of the published research as detailed by the faculty designed rubric. Discussion board assignments on readings reflecting on the relevance of published research in SLC 596: Second Language Acquisition Methodologies. All required discussion posts will be evaluated using a grading rubric for the students' evaluation of evidence.
- **Measures:** The curriculum will be monitored and refined based on student ability to defend and critique research

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		audience is undergraduate language graduates who want to go into teaching, as well as currently practicing language teachers who seek professional development in a program that is specifically designed for them. Furthermore, community college teaching opportunities require a master's degree in the target language; the MA in Language Teaching will provide community college teachers with the tools and skills necessary for successful teaching at that level. Additionally, based on a report by the American Academy of Arts and Sciences, educators with advanced training in language teaching will support the increasing desirability for bilingual skills in the workforce. Data from online job postings has shown a sharp increase in bilingualism as a desired skill across a variety of fields, including business and finance sectors, health care, customer service, education and public administration.	methods and evidence from published works in the Principles of Language pedagogy. **Learning Outcome 3:** Graduates of the MA in Language Teaching will be able to create different types of language related activities following current pedagogical recommendations. ● **Concepts:** Students will learn the principles of computer-assisted language learning, including how to develop and use technology for language teaching. ● **Competencies:** Students will be able to develop curricula for second language classes by applying existing technological tools to language learning, as well as developing their own tools. Teachers who are competent in the use of technology improve language teaching providing virtual access to the target culture and language. ● **Assessment Method:** Sample activities in the Applied Project will demonstrate an understanding of research-based pedagogical strategies relevant to second language and/or heritage learners and will be assessed using a faculty developed rubric. Activities in SLC 557 Computer Assisted Language Learning will demonstrate skill in using technology appropriately for language teaching and will be evaluated using a faculty-developed rubric. ● **Measures:** The curriculum will be monitored and refined based on student	

			ability to adapt pedagogical approaches to the most relevant computer assisted technology available.	

Master of Science in Natural Resource Management
 	
Watts College of Public Service and Community Solutions
 	
School of Community Resources and Development
 	
(Downtown Phoenix)
 	
2019-2020
	No	**Description and Justification:**
		The MS Natural Resource Management degree provides a transdisciplinary education that prepares graduate students for careers in natural resources management (NRM) in the private and public sector. NRM has historically emerged from a science-based curriculum. However, with an increased understanding of the role of humans in shaping natural environments, the profession recognizes the importance of social science in NRM. Our NRM degree has a strong focus on the social sciences aspect of NRM while still incorporating the natural sciences. Students learn to integrate the managerial, social, and natural sciences to make informed decisions regarding natural resources. This enables students to continue on to doctoral level work or enter the workforce with applied knowledge. The degree speaks to ASU's design aspirations of fusing intellectual disciplines, community-embeddedness and use-inspired research.
		
		Market Need:
			Learning Outcome 1: Graduates will master an understanding of the role of human agency and social science in shaping natural resource management.
			● **Concepts:** Graduates will master resource stewardship; project and program management; scientific method in natural resource management.
			● **Competencies:**
			  1. Effectively apply laws, policies, regulations, and guidelines to protect resources and ecological systems;
			  2. Apply knowledge of scientific concepts to plan, implement, and administer natural resources projects;
			  3. Knowledge and ability to apply sound scientific approaches and appropriate methods to resolve natural resource management issues
			● **Assessment Methods:** Program assessment exercise in CRD XXX: Natural Resource Management Assessment. Students will be rated on their major assignment that requires them to assess an existing major natural resource management program. Final project in CRD XXX: Natural Resource Management
				24

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Natural resources related employment is often obtained in federal and state management offices including USDA, agencies such as Forestry and Fish & Wildlife, and the National Parks Services. Government jobs offer good benefits packages and excellent retirement plans. Other employers may include public and private institutions or non-governmental and international organizations. The job growth rate for a career in this field is about 7% – 11% between now and 2024. A Masters NRM graduate working as a Forest Conservationist today earns $59,060 - $80,000/year, depending upon position and experience, while a Masters NRM graduate working as a Geographic Information System (GIS) Analyst earns $56,000 - $71,000/year. Research on business management degrees indicates that salaries can range upwards of $120,160/year with an NRM Master's degree in a management position and adequate experience.

Practice: Students will evaluate and offer new features for state-level natural resource management programs
- **Measure:** The curriculum will be refined based on measures indicating student ability to utilize resource stewardship; manage projects and programs; and apply scientific methods in natural resource management.

Learning Outcome 2: Graduates will master risk assessment and communication of threats and vulnerabilities on a contemporary natural resource topic.
- **Concepts:** Students will be able to utilize risk and assessment of risks methodologies; technical and public communication; professional credibility in the management of natural resources.
- **Competencies:**
  1. Application of contemporary practices in assessment of threats and vulnerabilities to natural resources;
  2. Ability to effectively communicate complex, technical, or controversial information of threats and vulnerabilities to diverse audiences;
  3. Demonstrated expertise in and contributions of risk methodologies in scientific endeavors.
- **Assessment Methods:** Risk assessment in CRD XXX: Risk Assessment and

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			Communication. Students will be rated on their ability to apply risk assessment practices to a natural resource topic of their choice. Formal pre-test and post-test polling of audience at public risk assessment presentations event, CRD XXX: Risk Assessment and Communication. ● **Measure:** The curriculum will be refined based on measures indicating student ability to utilize risk assessment methodologies to counter threats to natural resources.	
Master of Science in Organizational Leadership College of Integrative Sciences and Arts (Polytechnic) 2019-2020	Yes $160 per credit hour	**Description and Justification:** The Faculty of Leadership and Interdisciplinary Studies in the College of Integrative Sciences and Arts currently offers a Bachelor of Arts in Organizational Leadership to 1,340 undergraduates and an Organizational Leadership concentration to about 475 Interdisciplinary Studies students. We have assembled a strong core of faculty who are well positioned to establish a transdisciplinary MS in Organizational Leadership that builds upon our Bachelor of Arts in Organizational Leadership and complements other graduate degrees at ASU. The MS in Organizational Leadership will offer a theoretically and methodologically rigorous approach to theory and use-inspired research	**Learning Outcome 1:** Graduates will be able to apply a comprehensive body of organizational leadership scholarship and theory to identify and propose solutions to complex problems of leadership practice. ● **Concepts:** This program will produce graduates who are critical consumers, producers, and practitioners of leadership scholarship and theory. ● **Competencies:** Students will produce scholarship to apply social psychological and critical theories of leadership. ● **Assessment Methods:** In OGL 520 Organizational Leadership: Social Psychological Perspectives, students will demonstrate in a culminating research paper that they can apply social psychological scholarship and theories of leadership to identify and propose solutions to a problem of leadership practice. In OGL 530 Critical Perspectives	120

needed in organizational leadership including organizational dynamics, institutional evolution, strategic change, leading diverse teams, collaborative governance, conflict mediation, critical problem solving, leadership assessment, and advanced methodological and statistical skills.

Market Need:
According to 2016 Emsi data, there were roughly 223,000 organizational leadership jobs in the United States based on program market demand, but only 4,100 master's degrees were conferred that year. This leaves a substantial gap that ASU can help fill. Additionally, according to 2017 Emsi data, there was 1.1% growth in Leadership occupations between 2016 and 2017. Lastly, 25% of jobs posted between July 2017 and July 2018 sought an employee with skills in leadership and leadership development. All of the Emsi data indicates a thriving, and even growing, workforce in Organizational Leadership.

in Leadership Theory, students will demonstrate in a culminating research paper that they can critique a proposed solution to a problem of leadership practice by applying critical perspectives in leadership theory and articulating the normative and epistemological underpinnings of organizational leadership theories within the broader social, political, cultural, and ethical contexts of leadership theory.

- **Measures**: The curriculum will be monitored and refined based on measures of student ability to synthesize and apply a comprehensive body of organizational leadership scholarship to identify and propose solutions to complex problems of leadership practice, as well as to critique proposed solutions by applying critical perspectives and articulating the normative and epistemological underpinnings of organizational leadership theories.

Learning Outcome 2: Graduates will be able to demonstrate that they can identify and apply appropriate advanced quantitative and qualitative assessment methods of data analysis to leadership effectiveness and leadership theory.

- **Concepts:** This program will produce graduates who are critical consumers, producers, and practitioners of leadership scholarship and theory.
- **Competencies:** This program will produce graduates who can identify and apply

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			advanced quantitative and qualitative assessment methods to leadership effectiveness and leadership theory. ● **Assessment Methods:** In OGL 571 Advanced Leadership Assessment, students will demonstrate in a culminating case study their abilities to 1) gather, interpret and evaluate quantitative and qualitative evidence of leadership effectiveness, 2) apply advanced assessment methods to assess leadership effectiveness including the assessment of self and others, and 3) apply the data to create leadership development plans with interventions to improve leadership effectiveness. In OGL 574 Qualitative Data Analysis in Leadership Research, students will demonstrate in a culminating research paper that they can identify and apply an advanced qualitative method of data analysis to develop, assess or apply a theory of leadership they anticipate using in their culminating experience. In OGL 575 Quantitative Data Analysis in Leadership Research, students will demonstrate in a culminating research paper that they can identify and apply an advanced quantitative method of data analysis (and appropriate tools including SPSS) to develop, assess or apply a theory of leadership they anticipate using in their culminating experience. ● **Measures**: The curriculum will be monitored and refined based on	

EXECUTIVE SUMMARY

			measures of student ability to identify and apply appropriate advanced quantitative and qualitative assessment methods of data analysis to develop, assess, or apply leadership effectiveness and leadership theory.	
Master of Arts in Policy Advocacy Watts College of Public Service and Community Solutions Dean's Office, Watts College of Public Service and Community Solutions (Downtown Phoenix) 2019-2020	Yes $100 per credit hour	**Description and Justification:** This program will provide training and skills needed for successful careers within policy advocacy. This program directly addresses elements of ASU Charter by creating opportunities to increase the professionalism of individuals that can represent economic, social, cultural, and health concerns of local, state, national and other communities. ASU's DC location affords advantages to leverage the highly skilled and networked individuals who work in this region. Governmental and regulatory environments have become increasingly complex. Considerable expertise and knowledge is required to navigate the legal, communication, political and policy landscapes, and effectively create societal change. This complex environment has prompted interest groups to increasingly call upon professionals to champion their concerns, and influence opinion, legal precedent and local to international policies. Policy advocacy encompasses a wide range of activities that influence	**Learning Outcome 1:** Graduates in the MA in Policy Advocacy will allow students and professionals from a variety of backgrounds to understand, solve issues and work within the public policy process. ● **Concepts:** Understand the role of public policy in policy advocacy and be able to communicate this to others. ● **Competencies:** At the completion of CPP XXX, students will be able to apply analytical techniques to understand how the public policy process relates to policy advocacy and effectively communicate these relationships. ● **Assessment Methods:** Graduates in CPP XXX will demonstrate their knowledge of the public policy process through a written exam. Graduates in CPP XXX will demonstrate their ability to communicate the relationships between public policy and policy advocacy through their communications posted on a discussion board. ● **Measure:** The curriculum will be refined based on measures indicating student ability to apply analytical techniques to	90

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		decision makers. This includes traditional activities such as litigation, lobbying, and public education. It can also include capacity building, relationship building, forming networks, and leadership development. **Market Need:** The target audience is students from policy, legal, communication and other backgrounds with an interest in policy advocacy and working professionals seeking a career change or to enhance their skill set. Graduates can be expected to work at all levels of the public sector (federal, state, and local governments), as well as with nonprofit and private organizations. This degree will allow graduates to either begin or advance their careers in a wide range of fields, including: lobbying, public-private partnerships, child advocacy, community issues and development, health advocacy, law, education, social justice education, government, human rights, disability rights, environmental justice, human services, criminal justice, health care, business, nonprofit organizations and more. Very few universities in the nation offer any specific degrees that develop the high-level skills and techniques that are crucial to create change at the individual, community, and public policy levels.	communicate and advocate policy based solutions. **Learning Outcome 2:** Graduates will be able to apply and use legal, communications, policy and other applicable knowledge to plan for and approach real world policy advocacy issues. ● **Concepts:** Understand that multiple skills and knowledge sets are needed to create an effective policy advocacy campaign. ● **Competencies:** At the completion of CPP 593 Applied Project, students should have a good foundation for planning and approaching policy advocacy issues. ● **Assessment Methods:** Students in CPP 593 Applied Project will demonstrate their knowledge of planning for an advocacy project through a planning assignment. Students in CPP 593 Applied Project will demonstrate their knowledge of creating an effective policy advocacy campaign through completion of a final project. ● **Measure:** The curriculum will be refined based on measures indicating student ability to use legal, communications, policy and other applicable knowledge to create applicable solutions to policy advocacy issues.	

		According to the Bureau of Labor Statistics' Occupational Outlook Handbook, employment of community and social service occupations is projected to grow 14 percent from 2016 to 2026, faster than the average for all occupations, adding about 371,900 jobs. In addition, O*NET Online lists Social and Community Service Managers as a bright outlook occupation with a growth rate of 18% by 2026.		
Doctor of Philosophy in Spanish Linguistics College of Liberal Arts and Sciences School of International Letters and Cultures (Tempe) 2019-2020	No	**Description and Justification:** The Doctor of Philosophy in Spanish Linguistics would put ASU on the map to become the first university in Arizona with a doctoral program in Spanish linguistics. Spanish linguistics is an internationally recognized field of study, and demand for experts with an advanced degree in this field has been increasing over the past decade. At present, we offer a Doctor of Philosophy in Spanish, with a track in Spanish Linguistics. This track has attracted an increasing number of applicants and our graduate courses are thriving. Spanish linguistics, however, does not share content commonalities with Spanish literature and culture, and finding common courses is a challenge. Additionally, our graduate students stand a better	**Learning Outcome 1:** Graduates demonstrate and articulate appropriate content knowledge in the field of Spanish linguistics. ● **Concepts:** Students will learn key linguistic terminology to describe language, will identify common linguistic patterns of Spanish, and will discriminate among current linguistic theories. ● **Competencies:** Students will evaluate results of research in Spanish linguistics, will analyze samples of Spanish language, and will apply linguistic concepts to language teaching. ● **Assessment Methods:** Students can define key terms in the field using existing scholarship as demonstrated using faculty developed rubrics on course exams in SPA 543 and SPA 544. Students demonstrate and articulate familiarity with linguistic theories and history of the discipline as demonstrated	12

EXECUTIVE SUMMARY

chance on the job market if their titles reflect this specialization.

Market Need:
This degree addresses the increasing national and state-wide demand for more graduates with a Doctor of Philosophy in Spanish Linguistics, with specializations in second-language acquisition and teaching, heritage language research and pedagogy, historical linguistics, and sociolinguistics. The current Modern Language Association Spanish job list contains a substantial number of ads for Spanish linguists (44 percent of all positions in Spanish, 2016-2017, a notable increase from 35 percent in 2015-2016). This degree will help the School of International Letters and Cultures and ASU attain additional regional and national teaching and research excellence and prepare the next generation of experts in Spanish linguistics. In addition, the degree program will serve local (and also national) communities by addressing the growing need for K-12 and high school Spanish language teachers and administrators who involve the use of innovative language teaching practices. The Emsi data show that the most common job postings for individuals with a PhD in Spanish Linguistics advertised openings for the following

using faculty developed rubrics on course exams or written essays in SPA 543 and SPA 544. Students can analyze language samples as demonstrated using faculty developed rubrics on course assignments in SPA 543 and SPA 544.
- **Measures:** The curriculum will be monitored and refined based on student ability to develop a strong foundation in the field of Spanish linguistics, including understanding key terminology, the history of the field, current theoretical trends, and an ability to apply linguistic concepts to the analysis of language samples.

Learning Outcome 2: Graduates demonstrate familiarity with research methods common to the field and conduct relevant independent research projects.
- **Concepts:** Students will learn key terminology in quantitative and qualitative research methods, will identify and evaluate common data collection methods, and will identify and use current data analysis tools.
- **Competencies:** Students will evaluate research designs, will analyze linguistic data, and will formulate appropriate research questions.
- **Assessment Methods:** Students are able to synthesize and evaluate research reports as demonstrated using faculty developed rubrics on written projects about developing a research agenda in

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types of positions: Postsecondary Teachers, Managers, Instructional Coordinators, Computer and Information Research Scientists, Medical Scientists (except Epidemiologists), Secondary School Teachers (except Special and Career/Technical Education), and Detectives and Criminal Investigators. The most common job titles for individuals with a PhD in Spanish linguistics were the following: college/university faculty (tenure-track and contract faculty), project managers, learning managers, IT subject matter experts and Spanish translators. For an individual with a degree in Spanish Linguistics, there were 353 unique job postings in 2017 at university, colleges, schools as well as in the private sector such as Duolingo, IXL Learning, Inc., Amazon, and Google.

the following course -- SPA 598 (Research methods).
Graduates are able to design an individual research project that addresses relevant research questions as demonstrated using faculty developed rubrics on a final research paper in SPA 598 (Research methods).

- **Measures:** The curriculum will be monitored and refined based on student ability to defend and critique research methods and determine the best approach towards an original research question.

Learning Outcome 3: Graduates demonstrate knowledge of the conventions of scholarly activity in the field of Spanish linguistics.

- **Concepts:** Students will identify main linguistic theories and use academic conventions (written and oral).
- **Competencies**: Students will compare theoretical approaches and discuss implications of theories for practical use.
- **Assessment Methods:** Students can synthesize existing scholarship to create literature reviews offering new academic arguments and situating their own scholarship within ongoing conversations and larger contexts as demonstrated using faculty developed rubrics on a final paper in the following courses: SPA 598 (SLA), SPA 542, or SPA 546.
Graduates are able to give a professional

			presentation as demonstrated using faculty developed rubrics on the final oral presentation in the following courses: SPA 598 (SLA), SPA 542, or SPA 546. ● **Measures:** The curriculum will be monitored and refined based on student ability to articulate their scholarship and the interactions of current theories with the student's own academic arguments.	
Master of Science in Supply Chain Management W. P. Carey School of Business Department of Supply Chain Management (Tempe) 2019-2020	Yes $800 per credit hour	**Description and Justification:** Expanding the MS degree offerings at the W. P. Carey School is an effort to respond to student and corporate demand for more specialized programs. The proposed curriculum delivers students a solid Supply Chain Management program covering the core elements of analysis, as well as sophisticated and holistic understanding of supply chain management that balances analytical and soft skills. As the global economy continues to expand to include more markets, the demand for this degree will continue to rise from both students and organizations. Within the discipline, our Supply Chain Management Department consistently is ranked in the top 5, giving the promotion of the program an immeasurably positive boost. **Market Need:**	**Learning Outcome 1:** Graduates will evaluate a case study and create an actionable plan to a problem to demonstrate graduate-level proficiency in critical thinking within the supply chain management domain. ● **Concepts:** Students' supply chain case evaluations will demonstrate issue identification, reflect context and assumptions, outline a thesis or approach, and employ evaluation of evidence to defend conclusions and inferences. ● **Competencies:** Students will be able to state and describe the issue or problem that is being addressed, state and question implicit assumptions, identify the reverent contexts for stakeholders, evaluate source material and select appropriate evidence to support the student's claims. ● **Assessment Methods:** Students will analyze and complete a case study that forces them to choose between conflicting aspects of supply chain	75-100

| | | According to data from Emsi, offering the MS in Supply Chain Management degree will support a growing need for employers involved in the spectrum of activities across logistics, procurement, and operations. Their data shows very strong job growth (6.8%) over the next five years with an average starting salary across the industry of almost $90,000 per year.

Data from the most recent Emsi report shows few (16) competitor programs existed in 2017, leaving significant space in the marketplace for an offering from our top-ranked Department of Supply Chain Management, ranked #3 by the U.S. News and World Report this year. Furthermore, latest Emsi data suggests that a broad range of companies (current and target employers) plan on hiring to meet the increased need over the next 5 years. These data confirm our ability to deliver a competitive and attractive MS in Supply Chain Management, and demonstrates long-term demand from employers and students for the degree. | management in their capstone course. Graduates surveyed upon graduation (Graduate and Law Student Report Card) will evaluate the strength of their university preparation in "Critical Thinking Skills." Graduates surveyed 3 years after graduation (Graduate Alumni Survey) will evaluate the quality of "Acquiring job or work-related knowledge and skills."
● **Measures:** The curriculum will be monitored and refined based on student ability to evaluate a problem with conflicting aspects and assumptions, and articulate a plan to resolve the issue.

Learning Outcome 2: Graduates will evaluate a case study, evaluate options, and select and defend recommendations through writing to demonstrate graduate-level communication skills within the supply chain management domain.
● **Concepts:** Writing will align with the purpose of the assignment and reflect facility with Audience Awareness, Support and Development, Organization and Structure Style, Diction and Conciseness and Mechanics.
● **Competencies:** Written communication states the purpose and meets the audience's needs and expectations with regard to tone, design, and visual appeal; demonstrates developed main ideas with sufficient support; logical sequence with recognizable introduction, body, and conclusion; attempts to use paragraph | |

			structure and transitions to enable comprehension; demonstrates some variety of sentence structure, varied vocabulary and appropriate use of business terms; demonstrates proficient word usage; spelling, punctuation and capitalization errors do not interfere in a major way with the readability and writer's credibility. ● **Assessment Methods:** Students will prepare an analysis of a case that succinctly describes the problems, methodologies, outcomes, and recommendations in their capstone course. Graduates surveyed upon graduation (Graduate and Law Student Report Card) will evaluate the strength of their university preparation in "Writing Skills." Graduates surveyed 3 years after graduation (Graduate Alumni Survey) will evaluate the quality of "Writing Skills." ● **Measures:** The curriculum will be monitored based on student ability to evaluate multiple solutions to an issue and write a defendable presentation of a selected solution tailored for the appropriate audiences. **Learning Outcome 3:** Students will complete a final exam that comprehensively measures their ability to evaluate scenarios within the end-to-end supply chain management domain, thus demonstrating graduate-level proficiency in supply chain management knowledge.	

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			● **Concepts:** Supply chain management as a tool for competitiveness, Shifting between technical and business communications, Analysis of supply chain activities, Mapping of supply chain construct supply chain management domain thus demonstrating graduate-level global leadership.
			● **Competencies:**
			  1. Conduct advanced analyses used in standard operations of global supply chains including inventory, transportation, warehousing, procurement, and network design;
			  2. Explain how technology is used in supply chain management from fundamental use to innovative applications;
			  3. Demonstrate the ability to apply core methodologies in modeling the physical, informational, and financial flows in global supply chains;
			  4. Effectively present information and analyses in oral presentations and discussions; and
			  5. Communicate analyses and recommendations in written form.
			● **Assessment Methods:** Students will complete a final examination designed to assess their mastery of the program material which will be assigned in their	

			capstone course. Graduates surveyed upon graduation (Graduate and Law Student Report Card) will evaluate the strength of their university preparation in "Subject Matter in the Field." Graduates surveyed 3 years after graduation (Graduate Alumni Survey) will evaluate the quality of "Acquiring job or work-related knowledge and skills." **Measures:** The curriculum will be monitored and refined based on student ability to effectively analyze and model the global supply chain management practices across multiple scenarios. **Learning Outcome 4:** Graduates will investigate a global case study to critique international factors within the supply chain management domain thus demonstrating graduate-level global leadership. **Concepts:** Open economy and globalization, International company competitiveness, Differences between various geographical locations and design **Competencies:** Graduates will be able to understand and analyze globalization. Students will be able to identify and understand the factors of international supply chains. Student will have the proficiency to operate in various international assignments **Assessment Methods:** Graduates will identify global issues of supply chain management in analysis and	

			recommendations in a case assigned in SCM 545. Graduates surveyed upon graduation (Graduate and Law Student Report Card) will evaluate the strength of their university preparation in "Addressing Global and Local Issues." Graduates surveyed 3 years after graduation (Graduate Alumni Survey) will evaluate the quality of "Addressing Global and Local Issues." ● **Measures:** The curriculum will be monitored and refined based on student ability to appraise and dissect the factors of globalization in international supply chain.	
Master of Science in Sustainable Food Systems School of Sustainability (Tempe) 2019-2020	Yes $350 per credit hour	**Description and Justification:** As part of the educational mission of the Swette Center for Sustainable Food Systems, this will be the first graduate program to be launched. The program will fuse intellectual disciplines to equip the next generation of food policy leaders to understand the current landscape and then to shape it. Participants will include business, nonprofit and government professionals as well as graduate students from a range of disciplines. The diverse enrollment will encourage students to engage on a local, national, and global level to transform society toward more sustainable food systems	**Learning Outcome 1:** Graduates will be able to develop, evaluate, and communicate food policy initiatives, including the impact on public health and health equity. ● **Concepts**: Students will develop an interdisciplinary and panoramic understanding of the complexities of food system issues. Students will be able to recognize the history and effectiveness of previous food policy initiatives and model the potential effectiveness of new policy initiatives. ● **Competencies:** Students will achieve skills in the sustainability education competencies of systems thinking, normative thinking, strategic thinking.	50

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that value economic, social and cultural wellbeing. The curriculum will promote entrepreneurship and innovation, and will be socially embedded in issues related to land use, social justice, and equity. It will target emerging leaders from both rural and urban areas with demonstrated interest in food policy and a commitment to sustainable agriculture.

Market Need:
Each year there are 54,400 jobs within the food and agriculture sector and only 29,400 graduates with the necessary skills. Using an Emsi report, growth within the sector is expected at +7.4% with an estimated 17,617 annual openings. Interviews conducted by the Swette Center for Sustainable Food Systems director with leaders from local, state, and Federal government, as well as private sector businesses, and philanthropic and private equity investors have cited a critical need for professionals who understand and can lead food systems change from a multidisciplinary lens. Graduates of this program will be prepared to conduct research and assess, analyze, and create policy related to food security, sustainable agriculture, climate change, equity, and economic development.

- **Assessment Methods:** A section of the written report in the capstone course Organizational Research Project (new course) addresses the analysis of the development, evaluation and communication of food policy initiatives. The report will be assessed using a faculty-developed rubric. Students will deliver an oral presentation in their capstone course Organizational Research Project (new course). Presentations will be assessed using a faculty-developed rubric.
- **Measures:** The curriculum will be monitored based on student ability to justify and recommend food policy initiatives to combat the complexities of food system issues.

Learning Outcome 2: Graduates will be able to analyze and assess the complex policy making process as it relates to food systems at the local, state, federal and international levels.
- **Concepts:** Graduates will be able to assess multiple dimensions of the policy making process, including the roles of ethics and evidence.
- **Competencies:** Graduates will achieve skills in the sustainability education competencies of systems thinking, normative thinking, collaboration, strategic thinking, and future thinking.
- **Assessment Methods:** Policy Exercises in a new core course, Tools and Tactics for Food Policy Change will be assessed using

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| | | | a faculty-developed rubric. A section of the written report in capstone course Organizational Research Project (new course) addresses the analysis of the policy making process. The report will be assessed using a faculty-developed rubric.

● **Measures**: The curriculum will be monitored based on student ability to examine evidence and ethical approaches when developing policy at varying levels of government. | |

EXECUTIVE SUMMARY

Item Name: Request for New Academic Program for Arizona State University

☒   Action Item

> **Requested Action:** Arizona State University asks the committee to review and recommend for board approval a new program request effective in the 2019-2020 academic year.

Background/History of Previous Board Action

As provided in the board policy, new program requests may be submitted throughout the year with the approval of the Academic Affairs and Educational Attainment Committee.

Discussion

Arizona State University seeks to add a new program for implementation in the 2019-2020 Academic Year. This request is for one new academic program:

- Bachelor of Science in Technological Leadership

Degree planning at ASU is founded on the Charter. All academic degree programs go through multiple review and approval processes to ensure their currency, quality, and relevance. Each year, the Provost initiates the academic planning process. The academic deans, in consultation with the directors of the academic units, submit information on all proposed new degrees, concentrations, minors, and certificates for the ensuing year, as well as changes to existing degree titles, program disestablishments, and creation of new organizations, organizational changes and disestablishments. Once reviewed and approved by the Provost, these initiatives begin the review process, including, as applicable, the curriculum committees in the academic unit, college, Graduate College, and University Senate. At each level, a substantive review of the proposed program is completed to ensure quality and to avoid redundancy with other programs. At any step in the approval process, programs can be tabled and/or returned to the academic unit for further clarification and/or revision.

The new degree program advances leadership and innovation in science and technology by incorporating an interdisciplinary science education with collaborative problem-solving, team communication and critical thinking. In keeping with the 2019 Operational and Financial Review Enterprise Plan, the degree proposals are aligned strategically with our design aspirations to leverage our place, transform society, value

entrepreneurship, include use-inspired research, enable student success, fuse intellectual disciplines, be socially embedded, and engage students with issues locally,

Contact Information:

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Chad Sampson, ABO	chad.sampson@azregents.edu	602-229-2512

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nationally and internationally.

Statutory/Policy Requirements

ABOR Policy 2-223.A, "The Academic Strategic Plan"

ACADEMIC DEVELOPMENT PLAN

UNIVERSITY: Arizona State University

ARIZONA BOARD OF
REGENTS
ASU • NAU • UA

PROPOSED NEW ACADEMIC UNITS / PROGRAMS / MERGERS

<table>
<tr><td>

NAME OF PROPOSED DEGREE:
(Include--Degree type and major, college, school, location, and anticipated catalog year)

Bachelor of Science in Technological Leadership

The College of Liberal Arts and Sciences

Dean of Natural Sciences, The College of Liberal Arts and Sciences

Tempe Campus

2020-2021

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PROGRAM FEE REQUIRED?   YES ☐   NO X

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BRIEF DESCRIPTION:
(Include--justification and identified market need)

Description and Justification:

The focus of the BS in Technological Leadership is on training in leadership thinking and solving science- and technology-related open problems, which is a skill required for the new fields of the future, successful leadership, and graduate school in STEM fields. Graduates of the program will be prepared for leadership roles in science, technology, engineering and math. They will develop skills in complex interdisciplinary problem-solving, goal setting, team collaboration, creativity, persuasion and analytic reasoning.

The BS in Technological Leadership is a scalable three-year degree program using Exploration Learning techniques in the classroom and having students spend summers connecting directly with the community and employers in intensive internship experiences. Every student will learn statistics, physics, calculus and coding, in addition to collaborative problem-solving, team communication and critical thinking.

The heart of this major is two classes that every student takes every semester. We are calling them "thinking" and "making." In the thinking classes, students practice researching and stepping along a solution path of a big science- or technology-oriented question.

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Examples from past planetary-focused classes include "What will the Moon look like after settlement?" "How can humankind use biomimicry to help design planetary transports?" "How will we discover life off of the Earth and what should we do when we discover it?" They learn to ask productive questions, do research, apply their knowledge in physics, calculus and coding, and distill information for the team. In their final year they pursue their own topic with a goal of creating new knowledge. In the making classes, students use a similar process but in the creation of a physical object: an engineering project, an art and design project, technology-enhanced community service.

The degree's interdisciplinary vision of education will forward ASU's commitment to the economic, social and cultural health of our communities by producing graduates able to recognize and solve complex problems in a variety of real-world contexts not limited to a single disciplinary focus. The graduates will be prepared to compete for leading positions in technological fields in areas such as operations management, quantitative financial analyses, information technology, and geospatial information science.

Content is no longer the differentiator in education, as many college graduates require additional training after securing employment. In the BS in Technological Leadership, students gain the leadership, analytical and design skills necessary to solve the problems facing today's world. The program will help make the transition from school to workforce continuous, with life-improving skills for every arena.

Market Need:

A recent survey by Bloomberg reports that 60 percent of managers say new college graduates need more skills in critical thinking, teamwork and problem-solving.* This program explicitly targets development of advanced skills in critical thinking, collaborative problem-solving and leadership that transfer to any job, but especially to careers as managers, analysts, administrators and executives, a job market that O*NET estimates to increase by 10% or more between 2016 and 2026.

An Emsi analysis resulted in over one hundred thousand unique jobs posting in the US over the past two years in search of the intended skills set of critical thinking, collaborative problem-solving, and leadership. The frequency with which they appear in the job postings are 92% for Problem Solving, 70% for Management, 65% for Communications, 48% for Leadership and 27% for Innovation.

Intended job categories include:

11-1021.00 - General and Operations Managers
13-2099.01 - Financial Quantitative Analysts
19-2099 - Physical Scientists, All Other
15-1199.09 - Information Technology Project Managers

15-1199.04 - Geospatial Information Scientists and Technologists

In addition to the path to graduate school in STEM fields and the traditional titles listed by the Department of Labor, contemporary titles include Principal Investigator, Portfolio Manager, Information Technology Analyst, Information Technology Lead, Content Strategist, and later in their career, Chief Information Officer.

*https://www.bna.com/uploadedFiles/BNA_V2/Micro_Sites/2018/Future_of_Work/Workday %20Bloomberg%20Build-Tomorrow-Talent_FINAL.pdf

LEARNING OUTCOMES AND ASSESSMENT PLAN:
(Include—how the request measures learning of concepts (knowledge), competencies (skills), assessment method and/or instruments)

Learning Outcome 1: Graduates of the BS in Technological Leadership will be able to recognize and describe unsolved problems, and they will be able to identify relevant steps needed to solve those problems. Students will learn the key steps for understanding and solving technology- and science-related problems, including library research of primary sources, and the roles of observation, theory, and experimentation.

- **Concepts:** Linked tasks of question-asking and problem-solving; information assessment; creative thinking in physical, mathematical or social contexts.
- **Competencies:** Graduates will learn to craft productive questions and demonstrate expertise in tools used in Maker spaces, mathematics, computer programming, and software skills required for successful coding to create products and solutions to scientific and social problems, using technology. All students will know how to find, recognize, and read peer-reviewed primary research literature in science and engineering.
- **Assessment Methods:** In every Thinking class students will define and solve a large problem by iteratively asking Natural Next Questions, leading to the content of the next class. These questions create the practice of critical thinking and finding steps to solve a problem; the students' work will not go forward until this step is completed based on a faculty-designed rubric incorporating the relevance of the question, the articulation of the question, and the scale of the question. In every Making class, the students step through solving problems that require either creating a physical object or creating a social program. The outcomes will be assessed using a faculty-developed rubric on critical thinking, rigor, completeness, and creativity of problem-solving.
- **Measures:** Direct measures will include assessment of research, writing, presentation, mathematical concepts, coding, and software skills gained the Thinking and Making classes as demonstrated in the digital portfolio projects. Critical thinking will be measured directly using a formative, research-backed scoring system for the productivity of student questions. Indirect measures will include feedback surveys

and evaluations. The curriculum will be monitored and refined based on direct and indirect measures indicating student ability to understand and demonstrate creative problem-solving.

Learning Outcome 2: Graduates will be able to communicate effectively and collaborate in teams over a range of topics, from scientific and engineering to organizational and managerial, and engage in civil discourse when disagreement and dissent occur.

- **Concepts:** Collaboration; strategic problem solving; small group communication; written communication; oral communication; civil discourse; organizational theory.
- **Competencies:** Graduates will demonstrate expertise in giving and receiving critiques of their work, and they will understand a range of natural science and engineering topics, along with aspects of organizational management.
- **Assessment Methods:** In Thinking classes IPI 296 and IPI 496 and Making classes HDA 296 and HDA 496, the students will critique each other's work and respond to critiques, modeling what happens in the workplace. Effective written communication will be assessed in IPI 296 and IPI 496 and Making classes HDA 296 and HDA 496. Students will produce written products that include reports, reading summaries, critiques, literature reviews, and press releases that will be assessed against a faculty-designed rubric in rhetorical composition.
  In IPI 296 and IPI 496 and HDA 496, students will be evaluated against a faculty-designed rubric incorporating small group communication, presentation skills, and managing dissent and disagreement.
- **Measures:** Direct measures will include an assessment of the reports, project summaries and press releases students include in their digital portfolios, as well as research-backed quantitative scoring of giving and receiving productive peer critiques on their work. Indirect measures will incorporate feedback from internship site managers on students' ability to communicate clearly, accurately and respectfully in professional settings. The curriculum will be monitored and refined based on direct and indirect measures indicating student ability to communicate effectively and collaborate in teams.

Learning Outcome 3: Graduates will demonstrate work experience skills necessary for success in future employment and professional goals. These work experience skills will include problem-solving, goal-setting, team collaboration, creativity, persuasion, analytic reasoning, technical tool use, and time management (see https://learning.linkedin.com/blog/top-skills/the-skills-companies-need-most-in-2019--and-how-to-learn-them). Graduates will demonstrate an understanding of technological leadership as foundational to American enterprise and institutions in local, national and global contexts.

- **Concepts:** Metacognition; learned methodologies in new circumstances; team culture; leadership; career readiness. Ingenuity; innovation; contemporary technologies; the role of invention in American society; ethics of invention and ethics of production and distribution; types of leaders; leadership styles; culture; global enterprise.

- **Competencies:** Graduates will understand and know how to apply skills related to problem-solving, goal setting, team collaboration, creativity, persuasion, analytic reasoning, and time management in contemporary workforce environments. Graduates will demonstrate cultural and global competence; engage in transformational leadership; use technology in humane and productive ways; and transform society through creative problem solving. By analyzing the available internships and considering all their places in the economy, students will gain an overview of American enterprise across the public and private sectors.

- **Assessment Method:** In the upper division engaged learning courses, the students will apply learned methodology to work experience during internships and practicums, including oral and written communication, team collaboration, and problem-solving. Through the two summers of internship experience, students will articulate their employment goals using concepts from the program, including a big problem or goal, work and team culture, tools being used, and topics and content. Within their internship experiences, students will present their research, requiring them to distill their existing knowledge, and present it to a new audience, at the internship, and the work product will be assessed by rubrics that are co-developed by faculty and technological leaders who serve as mentors during the internships. During the summer internships students will take a linked series of online courses about ethics.

- **Measures:** Direct measures will include assessment of employment goals using concepts from the program, including a big problem or goal, work and team culture, tools being used, topics and content as presented in the digital portfolios, performance in the ethics courses, and assessments of their inventions in the Making courses. Indirect measures will include student self-assessments during the final year of Thinking courses (including their big-picture understanding of where their Making projects and internships fit in the landscape of American technology) and surveys of employers and internship site mentors. The curriculum will be monitored and refined based on direct and indirect measures indicating career readiness and the skills students possess.

PROJECTED 3RD YEAR ENROLLMENT: 50

May 2019

Date: January 4, 2019

To: John Arnold, Executive Director

From: Chad Sampson, Vice President, Research and Planning *c)*

Subject: Request for Academic Program Name Change

Per ABOR Policy 2-223-B.6.b, Arizona State University requests to change the following:

- Bachelor of Music in Music Education to Bachelor of Music in Learning and Teaching

- Bachelor of Science in Engineering and Chemical Engineering to Bachelor of Science in Chemical and Biomolecular Engineering

- Bachelor of Science in Construction Management to Bachelor of Science Construction Management and Technology

- Bachelor of Science in Aging and Lifespan Development to Bachelor of Science in Aging

- Master of Science in Aging and Lifespan Development to Master of Science in Aging

- Master of Science in Nutrition to Master of Science in Nutritional Science

- Doctor of Philosophy in International Letters and Cultures to Doctor of Philosophy in Comparative Culture and Language

- Master of Science in Built Environment to Master of Science in Architecture

- Master of Music in Music Education to Master of Music in Music Learning and Teaching

- Master of Science in Chemical Engineering to Master of Science in Chemical and Biomolecular Engineering

- Doctor of Philosophy in Chemical Engineering to Doctor of Philosophy in Chemical and Biomolecular Engineering

- Master of Science in Construction Management to Master of Science in Construction Management and Technology

- Master of Arts in Curriculum and Instruction to Master of Arts in Education

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved: _____
John Arnold, Executive Director

Date: _____1/7/19_____

Attachment

EXECUTIVE SUMMARY

ARIZONA STATE UNIVERSITY
ACADEMIC PROGRAM CHANGES

Table 1: Proposed Rename of Existing Degrees

Current Program	College/School (location)	Action Requested	Brief Description, Justification and Identified Market Need	Impact on Current Students
Rename Existing Undergraduate Degree				
Bachelor of Music in Music Education	Herberger Institute for Design and the Arts *School of Music* (Tempe)	Rename to: Music Learning and Teaching	**Description and Justification:** The School of Music proposes a name change from the Bachelor of Music in Music Education to Music Learning and Teaching. This change communicates how the program addresses music learning and teaching in inclusive and diverse settings, and it prevents misperceptions that the program focuses solely on K-12 music education. The phrase music education has strong associations with K-12 contexts. While the undergraduate program leads to K-12 certification, it also now prepares students for varied career pathways that may or may not include K-12 schools. Graduates of the program will be able to work in community centers, nonprofit agencies and as private tutors. **Market Need:** Recent alumni from the School of Music have started music studios, become education program directors of community music schools and started after-school music programs. Two current doctoral students had careers as "teaching artists" rather than K-12 music teachers. The University of Southern California, Eastman School of Music, and the University of Texas have successfully marketed a music education program with a music learning and teaching name, and the inclusive music learning and teaching name makes the school's openness to diverse forms of music learning and teaching explicit. This has potential to attract people who seek to become teaching artists, studio teachers, education outreach professionals or other types of music learning and teaching experts.	All students will be notified in advance that the last time they can graduate with the old name will be the summer before the fall effective term of the rename.

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			The change would have no impact on the existing K-12-oriented aspects of our program.	
Bachelor of Science in Engineering in Chemical Engineering	Ira A. Fulton Schools of Engineering *School for Engineering of Matter, Transport and Energy* (Tempe)	Rename to: Chemical and Biomolecular Engineering	**Description and Justification:** To promote the chemical engineering degrees and recruit more students, the program requests that the name of the chemical engineering degree is changed to Chemical and Biomolecular Engineering. When Colorado State recently changed "Chemical Engineering" to "Chemical and Biological Engineering" (both in department names as well as degree names), the freshman enrollment increased 55 percent and attracted significantly more female students, despite the fact that the university has existing Biomedical Engineering offerings. The name change will also align with faculty research; over 35 percent of the chemical engineering faculty conduct biological research and the name change will bring more visibility to the biomolecular expertise of the faculty. **Market Need:** Chemical engineers can work in the traditional fields of plastics, petroleum, petrochemical, specialty chemicals, environment protection as well as newer fields including semiconductors, fuel cell and modern materials. The addition of "biomolecular" components to the traditional "chemical engineering" program enables students majored in Chemical and Biomolecular Engineering to work in the emerging fields of biotechnology, biomedical engineering, and biofuels. According to a database generated by the Occupational Information Network (O*NET) under sponsorship of the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA), job growth for chemical and biomolecular related engineering fields are estimated at: biomedical engineer (6.4%, median salary of $97 250), biofuel development manager (5.5%, median salary of $137,720), chemical engineer (7.5%, median salary of $102,160), chemist (6.5%, $74,740), fuel cell engineer (8.8%,	Students who graduate in the program through May 2020 will complete the program under the old name. New and continuing students will be advised about the program changes and assisted with making changes in major (program and concentration) as needed.

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			median salary of $85,880), nuclear engineer (3.8%, median salary of $105,810), petroleum engineer (15.2%, median salary of $132,280)."	
Bachelor of Science in Construction Management	Ira A. Fulton Schools of Engineering *E. Webb School of Construction* (Tempe)	Rename to: Construction Management and Technology	**Description and Justification:** The school wishes to change the Bachelor of Science and Master of Science degree program names from Construction Management to Construction Management and Technology. The curriculum has changed to keep pace with the increasing technological advancements in the evolving construction industry. Growth has occurred in areas such as building information modeling and augmented reality, software for controlling projects and sustainable construction materials. This name change helps enable student success by positioning our graduates well for the future of automation, robotics and machine learning in the industry. The change also helps to fuse intellectual disciplines of management and technology to transform society. **Market Need:** The inclusion of technology in the new name should attract additional students interested in specialized construction technologies. Of accredited construction management programs, half are considered management and half are considered technology. An Emsi report was generated for master's programs emphasizing construction engineering technology/technician. Regional trends predict the job market will increase 5.0% with 946,528 jobs in 2018 to 993,655 by 2023. This is an increase of 47,127 positions. The occupations in the report also showed growth: civil engineers (+6.31%), construction managers (+2.61%), and cost estimators (+7.23).	Current students may be assisted if their place of employment, military or sponsor gives additional funding for STEM programs. In this same way potential students may be attracted by the program due to the STEM designation.
Bachelor of Science in Aging and Lifespan Development	New College of Interdisciplinary Arts and Sciences *School of Social and Behavioral Sciences*	Rename to: Aging	**Description and Justification:** The College wishes to rename the BS in Aging and Lifespan Development to the BS in Aging. The proposed BS in Aging degree will emphasize interdisciplinary theory, application, and evidence –based practices focusing on key current and future issues faced by mid-life and older adults, paying special attention to the socio-cultural and psychological dimensions of aging. The College of Nursing and Health Innovation is proposing an MS in Aging and the faculties are working	No impact on students. No students currently enrolled in the program.

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| | (West) | | collaboratively. The concepts and outcomes across the two programs will be coordinated, addressing issues of health, aging and social systems from multiple disciplinary perspectives.

The U.S. population is aging swiftly. The number of U.S. residents age 65 and over grew by 40.6 percent from 2000 to 2016 (U.S. Census Bureau). Arizona's over-65 population is expected to increase from 883,000 to almost 2.5 million by 2050 -- a 170 percent change (2014-2018 Arizona Healthy Aging Plan). These developments mean that workers who have a background in issues affecting older adults will be in high demand. Areas affected range from health care to marketing, from education to product design, and from government services to financial planning. ASU is well-positioned, as a retirement and travel destination, to offer degree programs in Aging. ASU's charter and design aspirations of inclusion and social transformation give us the ability to embed this population in our educational and research agenda as well.

Market Need:
Job Market Outlook: Emsi (Economic Modeling Specialists International) Labor Market Demand Statistics suggest a growth of 7.6-7.9 percent (gerontology) and 11.3-11.4 percent (adult development and aging) between 2017 and 2022. Key careers include program specialists (e.g., senior services, medical and health services, and community services), facility workers and managers (long-term care) and case managers (senior services). Job growth is expected to continue to expand for those that gain expertise in aging especially in Arizona, a state known as a destination for those 55-years old and above. The target audience is students wanting to establish a career that requires knowledge and expertise in aging. Key competitors include the University of Southern California and the University of South Florida. | |

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Rename Existing Graduate Degree				
Master of Science in Aging and Lifespan Development	College of Nursing and Health Innovation (Tempe)	Rename to: Aging	**Description and Justification:** The college wishes to rename the MS in Aging and Lifespan Development to the MS in Aging. The proposed MS in Aging degree will draw from the educational competencies of the Academy for Gerontology in Higher Education that emphasize theoretical, empirical, and evidence –based practices focusing on key current and future issues faced by mid-life and older adults. Currently, there is no preferred term for the field; Aging and Gerontology tend to be used interchangeably. For example, the two leading interdisciplinary professional organizations in the U.S. are The Gerontological Society of America and the American Society on Aging. All over the world societies increasingly are growing disproportionately older, according to the U.S. Census, 2035 will mark the first time older adults will outnumber children. Arizona is expected to have the fifth highest increase of older adults in the nation and an increasingly diverse older adult population. This growth has increased the demand for professionals with knowledge and expertise in aging across a wide range of disciplines and professions (e.g., education, recreation, social services, health care, long-term care, business services and product design). Given the 'graying' of Arizona, the nation and the globe, the MS in Aging is aligned with ASU's charter and design aspirations in assuming responsibility for the overall health of our communities, fusing intellectual disciplines, transforming society by connecting to social needs and being socially embedded through potential partnerships with the aging network of health and social services, as well as entrepreneurs developing senior-related business ventures. **Market Need:** Job Market Outlook: Emsi (Economic Modeling Specialists International) Labor Market Demand Statistics suggest a growth of 7.6-7.9 percent (gerontology) and 11.3-11.4 percent (adult development and aging) between 2017 and 2022.	No impact on students. No students currently enrolled in the program.

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			Key Careers and Employment Opportunities: Key careers include program manager (e.g., senior services, medical and health services, and community services), facility directors (long-term care) and case managers (senior services). Given the aging of our population, job growth is expected to continue to expand for those that gain expertise in aging above and beyond their undergraduate degree and related work experience whether in social services, health care, public health, long-term care or education, recreation and retirement services, and senior-oriented business ventures and services. Target Audience: The target audience is working professionals whose career development from both their own and their employer's perspectives requires advanced knowledge and expertise in aging. Key Competitors: Emsi Analyst data for both Master of Gerontology and Master of Adult Development and Aging degrees state the program's biggest competitors include the University of Southern California, the University of South Florida, and San Francisco State University.	
Master of Science in Nutrition	College of Health Solutions (Downtown Phoenix)	Rename to: Nutritional Science	**Description and Justification:** The name Nutritional Science more accurately reflects the areas of research foci and specialization provided by faculty in this degree program. The term Nutrition does not adequately capture some of the current and emerging areas in nutritional science such as nutrigenomics, metabolomics, microbiome, cellular and whole body metabolism. In addition, Nutritional Science better encompasses research areas related to population health and food and nutrition policy development. **Market Need:** According to Emsi (Economic Modeling Specialists International), there will be a 12.1 percent increase in jobs related to the Master of Science in Nutritional Science by 2022, which translates to 50,128 jobs. The target audience is students seeking an advanced degree in research-related nutrition. These professionals will be eligible for jobs as clinical dietitians, pediatric clinical dietitians and sports dietitians. The degree will also be appropriate for registered	All students will be notified in advance that the summer before the fall effective term of the rename will be the last time they can graduate with the old name. Students will be notified by email, in person during their classes, and by their committee chairs.

EXECUTIVE SUMMARY

			dietitians because these professionals will be required by 2024 to have a master's degree.	
Doctor of Philosophy in International Letters and Cultures	College of Liberal Arts and Sciences *School of International Letters and Cultures* (Tempe)	Rename to: Comparative Culture and Language	**Description and Justification:** The renaming of the degree to Comparative Culture and Language will more appropriately reflect the conceptual structure and aspirations of the degree. This new name aligns with the current curriculum to attract students and increase enrollment in the program. The rationale is 1) to better reflect the content of the degree and the career goals and opportunities of its students; and 2) to be in line with similar programs in the U.S. and abroad. The new name will make the program more visible to prospective students who search for programs online. Increased brand recognition will also better position the program alongside PhD programs offered by other universities. **Market Need:** The number of interdisciplinary degrees focusing on the study of culture and society is increasing at universities in the United States. Successful comparative studies degrees exist at the University of California at Santa Cruz, New York University, the University of Minnesota, and the Ohio State University, among others. Those degrees have name recognition and usually include the terms "comparative," "culture," and "studies," among other variations. By including keywords that identify these attractive Doctor of Philosophy degrees, the renamed program will attain the desired marketability. An Emsi report was generated for doctoral programs emphasizing new English language and literature, general. Regional trends predict the job market will increase 6.6% with 2,690,931 jobs in 2018 to 2,869,232 by 2023. This is an increase of 178,301 positions. The occupations in the report also showed growth: postsecondary teachers (+7.91%), secondary school teachers, except special and career/technical education (+4.82%), and education administrators, postsecondary (+6.19).	There will be no change to degree requirements. The impact on current students will be only positive, as the current degree is more marketable. The new name has the potential of increasing interest among prospective students and could entail higher enrollment, as the program will be better positioned to compete with other comparable programs. All students will be notified in advance that the summer before the fall effective term of the rename will be the last time they can graduate with the old name.

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| Master of Science in Built Environment | Herberger Institute for Design and the Arts

The Design School

(Tempe) | Rename to: Architecture | **Description and Justification:**
We propose a change from MS in the Built Environment to MS in Architecture. MS in Architecture is the most widely recognized degree name for the content currently delivered within the MS in the Built Environment. MS in the Built Environment is an obscure degree name that is clearly hindering the visibility and recognition of our students, faculty, and research. The Association of Collegiate Schools of Architecture and the Architectural Research Centers Consortium recognize the MS in Architecture as the official post-professional research-based degree of our industry.

The renamed program will be distinct from the MArch. The distinction between the MS and the MArch is that the latter is a professional degree and the former is a post-professional degree. This nomenclature aligns with and is recognized by the National Architectural Accreditation Board (NAAB). MS is the typical name for one-year post-professional degrees and will also be more recognizable to candidates. The MArch is an accredited professional degree program at ASU that promotes broad areas of knowledge, professional skill and a social awareness that the architect must command if architecture is to enhance contemporary life and remain an enduring and valid expression of society. The Master of Science in Architecture (MS) is a postgraduate program committed to advanced research on the built environment. The program is built around the expertise of full-time faculty. Students in the MS Architecture program work directly with a faculty member whose areas of interest align with their own.

Market Need:
The 2018 Association of Collegiate Schools of Architecture whitepaper on Architectural Education Research and STEM documents the growth, diversity, and innovation in contemporary architectural research. Peer and aspirational institutions such as The University of Michigan, UC Berkeley, University of Pennsylvania, | All students will be notified in advance that the summer before the fall effective term of the rename will be the last time they can graduate with the old name. |

EXECUTIVE SUMMARY

			Georgia Tech, and Columbia University execute this academic research within their respective MS in Architecture degree programs. National publication and recognition of research work performed by students and faculty within our MS in the Built Environment program will increase, within both the Association of Collegiate Schools of Architecture and the Architectural Research Centers Consortium, following this degree name change. Graduates with a first-professional degree in Architecture (accredited Master of Architecture, or 5-year accredited Bachelor of Architecture degrees) seek post-professional MS in Architecture degrees as a place to test and perform innovative research that is often more practice-based and directly applied than research work conducted in a PhD program. An Emsi report was generated for master's programs emphasizing architecture and related services. Regional trends predict the job market will increase 2.7% with 523,226 jobs in 2018 to 537,350 by 2023. This is an increase of 14,124 positions. The occupations in the report also showed growth: architects, except landscape and naval (+2.99%) and construction managers (+2.61%).	
Master of Music in Music Education	Herberger Institute for Design and the Arts *School of Music* (Tempe)	Rename to: Music Learning and Teaching	**Description and Justification:** The School of Music proposes a name change from the Master of Music in Music Education to Music Learning and Teaching. This change communicates how the program addresses music learning and teaching in inclusive and diverse settings, and it prevents misperceptions that the program focuses solely on K-12 music education. The phrase music education has strong associations with K-12 contexts. The graduate degree programs are designed to provide students with skills for facilitating music learning in diverse settings. **Market Need:** Recent alumni from the School of Music have started music studios, become education program directors of community music schools and started after-school music programs. Two current doctoral students had careers as "teaching artists" rather than K-12 music	All students will be notified in advance that the last time they can graduate with the old name will be the summer before the fall effective term of the rename.

EXECUTIVE SUMMARY

			teachers. The University of Southern California, Eastman School of Music, and the University of Texas have successfully marketed a music education program with a music learning and teaching name, and the inclusive music learning and teaching name makes the school's openness to diverse forms of music learning and teaching explicit. This has potential to attract people who seek to become teaching artists, studio teachers, education outreach professionals or other types of music learning and teaching experts. The change would have no impact on the existing K-12-oriented aspects of our program.	
Master of Science in Chemical Engineering	Ira A. Fulton Schools of Engineering *School for Engineering of Matter, Transport and Energy* (Tempe)	Rename to: Chemical and Biomolecular Engineering	**Description and Justification:** The new name will promote the Chemical Engineering degrees and attract more students. When Colorado State recently changed "Chemical Engineering" to "Chemical and Biological Engineering" (both in department names as well as degree names), the freshman enrollment increased 55 percent and attracted significantly more female students, despite the fact that the university has existing Biomedical Engineering offerings. In addition, the new program name will promote faculty research; over 35 percent of the chemical engineering faculty conduct biological research and the name change will bring more visibility to this research area. **Market Need:** A survey of peer and aspirational institutions across the U.S. was performed and the majority have changed "Chemical Engineering" to "Chemical and Biomolecular Engineering." The name change would attract more students into our program since it broadens the areas of study and promotes additional paths in medical, pharmaceutical and related careers. An Emsi report shows regional trends predict the job market will increase 6.7% with 425,347 jobs in 2018 to 453,836 by 2023. This is an increase of 28,489 positions. The occupations in the report also showed growth: industrial engineering (+7.20%), chemists (+5.12%), biochemists and biophysicists (+7.87%), and chemical engineers (+5.68).	Students who graduate in the program the summer before the fall effective term will complete the program under the old name. New and continuing students will be advised about the program rename in advance.

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| Doctor of Philosophy in Chemical Engineering | Ira A. Fulton Schools of Engineering

School for Engineering of Matter, Transport and Energy

(Tempe) | Rename to: Chemical and Biomolecular Engineering | **Description and Justification:**
The new name will promote the Chemical Engineering degree and attract and retain more PhD students who are interested in pursuing graduate studies and professional careers in bio-related chemical engineering fields. The new program name will promote the visibility of over 35 percent of the chemical engineering faculty and a large number of the chemical engineering PhD students who perform research in bioenergy, biological engineering, and biomedical engineering. The new program name will also provide the PhD students with increased employment opportunities in bio-focused industries and as biomedical/bioengineering faculty.

Market Need:
A survey of peer and aspirational institutions across the U.S. was performed and the majority have changed "Chemical Engineering" to "Chemical and Biomolecular Engineering." The name change would attract more students into our program since it broadens the areas of study and promotes additional paths in medical, pharmaceutical and related careers. Finally, the University of Arizona uses "Chemical and Environmental Engineering" thus ASU's current "Chemical Engineering" degrees may appear narrower and less attractive to students. An Emsi report was generated for doctoral programs emphasizing biomolecular. Regional trends predict the job market will increase 6.9% with 146,728 jobs in 2018 to 156,863 by 2023. This is an increase of 10,135 positions. The occupations in the report also showed growth: chemists (+5.13%), computer and information research scientists (+11.02%), and biochemists and biophysicists (+7.89%). | Students who graduate in the program the summer before the fall effective term will complete the program under the old name. New and continuing students will be advised about the program revised name in advance. |
| Master of Science in Construction Management | Ira A. Fulton Schools of Engineering

Del E. Webb School of | Rename to: Construction Management and Technology | **Description and Justification:**
The proposed program name change aims to reflect important changes in the program and trends in this field. The curriculum has changed to keep pace with the increasing technological advancements in the evolving construction industry. Some of these advances include building information modeling and augmented reality, software for controlling projects and sustainable construction | All students will be notified in advance that the summer before the fall effective term of the rename will be the last time they can graduate |

EXECUTIVE SUMMARY

	Construction *(Tempe)*		materials. The name change will contribute to student success by positioning our graduates well for the future of automation, robotics and machine learning in our industry. The change also helps to fuse intellectual disciplines of management and technology to transform society. **Market Need:** The inclusion of technology in the new name should attract additional students interested in specialized construction technologies. Of accredited construction management programs, half are considered management and half are considered technology. An Emsi report was generated for master's programs emphasizing construction engineering technology/technician. Regional trends predict the job market will increase 5.0% with 946,528 jobs in 2018 to 993,655 by 2023. This is an increase of 47,127 positions. The occupations in the report also showed growth: civil engineers (+6.31%), construction managers (+2.61%), and cost estimators (+7.23).	with the old name.
Master of Arts in Curriculum and Instruction	Mary Lou Fulton Teachers College *Division of Educational Leadership and Innovation* *(Tempe)*	Rename to: Education	**Description and Justification:** "Curriculum and Instruction" is poorly-recognized among prospective students, especially among individuals who are interested in teaching and other professional opportunities in informal education and adult learning contexts. Peer institutions such as Johns Hopkins University have simply titled their main master's degrees "Education." In addition, the name change will add flexibility and innovation in the creation of new programs with units across the university. The name change from "Curriculum and Instruction" to the more generic "Education" maintains a focus on teaching and learning, but it is not restricted to formal education. **Market Need:** "Curriculum and Instruction" is no longer strongly-identified as the main degree title in graduate programs in education. Newer online master's degrees are titled simply the MA or MS in Education -- these include Johns Hopkins University (480 graduates in most recent year	All students will be notified in advance that the summer before the fall effective term of the rename will be the last time they can graduate with the old name.

EXECUTIVE SUMMARY

			available), San Jose State University (280), and National University (891), as examples of public universities with large online master's graduations (Source: Emsi Analyst). We are successful in enrollments despite of, and not because of, the "Curriculum and Instruction" degree title for our MA.	

Table 2: Non-High Enrollment Program Disestablishments

College/School (location)	Current Degree Name, Plan Code and CIP Code	Action Requested (e.g., rename or disestablish) including recommended date for the action.	Brief Description and Justification	Impact on Current Students
None Submitted				

January 4, 2019

To: John Arnold, Executive Director

From: Chad Sampson, Vice President, Research and Planning   c♂

Subject: Request for Academic Program Transfer

Per ABOR Policy 2-223-B.6.c., Arizona State University requests to transfer the following:

- Bachelor of Science in Aging from College of Liberal Arts and Sciences (Dean's Office) to School of Social and Behavioral Sciences, New College of Interdisciplinary Arts and Sciences

- Master of Science in Aging from College of Liberal Arts and Sciences (Dean's Office) to College of Nursing and Health Innovation

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved:
John Arnold, Executive Director

Date: 1/4/19

Attachment

EXECUTIVE SUMMARY

ARIZONA STATE UNIVERSITY

ACADEMIC ORGANIZATIONAL CHANGES

Table 1: Modified Academic Organizations

College/School	Department/School Current Name	Action Requested	Brief Description and Justification	Impact on Current Students	Fiscal Impact	Proposed Effective Term
None Submitted						

Table 2: Proposed Moves of Academic Programs

Current Program	College/School (location)	Action requested	Justification/Brief Description	Impact on Current Students
Undergraduate Programs To Be Moved				
Bachelor of Science in Aging	New College of Interdisciplinary Arts and Sciences *School of Social and Behavioral Sciences* (West)	Move program: From: College of Liberal Arts and Sciences (Dean's Office) To: School of Social and Behavioral Sciences, New College of Interdisciplinary Arts and Sciences	The School of Social and Behavioral Sciences on the West campus is ideally situated for the Bachelor of Science in Aging due to faculty expertise and proximity to programs in social work, nursing and health. The faculty from New College, College of Health Solutions, Watts College of Public Service and Community Solutions, and College of Nursing and Health Innovation will be able to collaborate on an interdisciplinary approach to aging.	There are no students currently in this program.
Graduate Programs To Be Moved				
Master of Science in Aging	College of Nursing and Health Innovation	Move program: From: College of Liberal Arts and Sciences (Dean's Office)	The College of Nursing and Health Innovation is located in downtown Phoenix which has become the central hub for ASU health programs. This location is ideal for the MS in Aging due to faculty expertise in nursing and health. The aging program will be complementary to	There are no students currently in this program.

EXECUTIVE SUMMARY

	(Downtown Phoenix)	To: College of Nursing and Health Innovation	the college's existing programs in health care innovation. The Downtown Phoenix campus provides opportunities for collaboration with the College of Health Solutions and the Watts College of Public Service and Community Solutions.	