

EXECUTIVE SUMMARY

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

Action Item

Requested Action: Northern Arizona University asks the board to approve two new program requests and one unit change effective for the 2019-2020 academic year.

Background/History of Previous Board Action

- As provided in board policy, Academic Strategic Plans may be modified during the year with the approval of the Academic Affairs and Educational Attainment Committee.

Discussion

Northern Arizona University seeks to amend its Academic Strategic Plan for implementation in the 2019-2020 academic year. This request is for the following:

- Indian Country Criminal Justice, BS
- Building Science, MS
- Department of Physics & Astronomy to become two departments: Department of Applied Physics and Materials Sciences, which will be housed in the College of Engineering, Informatics and Applied Sciences, and the Department of Astronomy and Planetary Sciences will remain housed in the College of the Environment, Forestry and Natural Sciences

Committee Review and Recommendation

The Academic Affairs and Educational Attainment Committee reviewed this item at its March 28, 2019 meeting, and recommended forwarding the item to the full board for approval.

Statutory/Policy Requirements

ABOR Policy 2-223.A – the Academic Strategic Plan

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ACADEMIC DEVELOPMENT PLAN

UNIVERSITY: Northern Arizona University



PROPOSED NEW ACADEMIC PROGRAM

NAME OF PROPOSED ACADEMIC PROGRAM:

Bachelor of Science, Indian Country Criminal Justice
College of Social & Behavioral Sciences
Departments of Applied Indigenous Studies and Criminology & Criminal Justice
Flagstaff, AZ
Catalog year: 2019-2020

PROGRAM FEE REQUIRED? YES NO

Description and Justification: One of NAU's strategic goals is to be a leading university serving Native Americans and Native American communities. This program will provide preparatory training for entry and continuing education for career advancement for Indian Country criminal justice professionals (e.g., law enforcement officers who work for or in Indian nations, BIA agents; FBI agents; casino security officers; probation officers; victim advocates; juvenile case workers; court judges and court personnel of Indian nations; peacemakers; and others). Graduates will have knowledge of the unique doctrines, laws, rules, and institutions that regulate justice in Indian Country and have capacities to navigate jurisdictional complexities related to Indian nation sovereignty, and international border issues. The program will produce criminal justice professionals with understanding of Indian communities, Indian peoples, and Indian cultures as they relate to criminal justice practice.

Market Need: The major in ICCJ major is unique and the only one of its kind in the United States. The Bachelor of Science in Indian Country Justice is tailored for criminal justice work in Indian Country, particularly American Indian reservations in the United States. Criminal justice work in Indian Country requires knowledge of special federal and Indian nation laws and using them to solve challenges and issues that are not encountered in communities off the reservations. The federal government recognizes 572 Indian nations as Federally Recognized Tribes. The 572 Indian nations are domestic sovereigns and have a government-to-government relationship with the United States and the states. Congress relies on the government-to-government relationship to create unique laws and rules on criminal justice in Indian Country and the U.S. Supreme Court has affirmed their validity. Students studying in the criminal justice field, rarely, if ever, are educated on the challenges and unique legal aspects of criminal justice in Indian Country.

NAU worked with both its Native American Advisory Council and the Navajo Nation leadership in particular to develop this degree to meet local needs, while also developing the curriculum in an online delivery model to serve students across the U.S. and in Canada.

Potential need and impact of the ICCJ program in Arizona is suggested by the concentration of reservation lands in the state (over 25%). The majority of the Navajo Nation, the largest Native American reservation, and all of the Tohono O'odam Nation, the second largest reservation, are located in Arizona.

Further indication of need comes from a survey of Indian nations located in Arizona. Arizona Indian nations reported the following numbers of positions and indicated need to expand personnel:

1. Police officer positions and Casino security positions: 754
2. Estimated shortage of police officers: 355 (some Indian nations did not report this data)
3. Judge positions (most tribes do not require a law degree): 76
4. Prosecutor positions (most tribes do not require a law degree): 53 (some Indian nations did not report this data)
5. Public defender positions (most tribes do not require a law degree): 22 (some Indian nations did not report this data)
6. Other criminal justice positions (probation, bailiff, traditional specialists, criminal investigator, victim witness specialist, and court staff): 361 (some Indian nations did not report this data)

**Total number of reported criminal justice positions of Indian nations in Arizona:
1,621

The needs extend beyond Indian Nations in the southwest. The data the U.S. Department of Justice collected in 2002 ("Census of Tribal Justice Agencies") shows the number of law enforcement positions that were reported by 117 of the 562 (2002 figure) federally recognized Indian nations in the United States. National total of law enforcement positions in 2002: 1,894. Tribes that operate gaming on their lands, especially those located near metropolitan areas, have larger police forces in comparison to their enrolled population. In Arizona, 16 Indian nations operate casinos. <http://www.azindiangaming.org/>, accessed on February 7, 2018.

Needs also extend to non-Native justice system members that serve Indian Country. To provide a national view of possible program applicants, the following statistics give an indication of the large numbers of law enforcement, court, correctional and other personnel who need specialized knowledge of Indian Country in order to effectively provide services:

1. As of November 2017, Indian Country jails employed about 1700 staff (Adams et al 2017).
2. There are about 300 law enforcement agencies in Indian Country of which about 225 are operated by Indian nations, 43 are conservation and wildlife enforcement agencies, 6 are tribal college or university police, and 27 are BIA agencies (Adams et al 2017).
3. As of 2005, according to the FBI there were 2380 BIA and tribal uniformed officers in the lower 48 states (Tribal Law and Policy Institute 2005) and Indian nation-operated law enforcement agencies employed 3462 full-time personnel in total (Tribal Law and Policy Institute 2005). Note: this number will likely increase with

the increase in the number of law enforcement agencies from about 200 to 225 from 2005 to 2017.

4. At least 2490 more sworn officers are needed in Indian Country to provide minimum and equitable coverage, according to the National Congress of American Indians (Tribal Law and Policy Institute 2005). Note: this number also likely will increase.
5. There are 124 full-time FBI Special Agents and 42 FBI Victim Specialist in 20 FBI fields Offices that work in Indian Country. Thirty-three FBI offices (of which nine are in the Southwest) have some Indian Country responsibilities (U.S. Department of Justice 2014).
6. As of 2002, there were 188 justice systems (dispute resolution systems) of Indian nations in the United States.
7. There were 260 courts including Indigenous courts, CFR courts, and tribal courts; some of which operated within the same court system (BJS 2005).
8. There are 25 U.S. Attorney's Offices with responsibilities in Indian Country and they employ special tribal prosecutors (U.S. Department of Justice 2014).
9. As of 2002 in Indian Country, there were about 200 trial and appellate court judges, 125 court administrators, 5 court interpreters, 150 prosecutors, 110 public defenders, 180 probation officers, 5 parole officers, 20 peacemakers, 95 bailiffs/process serves, 75 staff attorneys, and 620 support and other personnel. There were also large numbers of part-time personnel in these positions; for example, about 300 bailiffs and 15 support workers (Perry 2002). It should be noted that updated data collection begun in 2017 and will likely show increased numbers in all categories due to the increase in the number of courts.
10. In addition to the agencies listed above, additional students may come from the following federal agencies who are members of the Indian Country Federal Law Enforcement Coordination Group: the Department of Justice's Bureau of Alcohol, Tobacco, Firearms and Explosives, Drug Enforcement Administration, FBI Criminal Justice Information Services (as well as the FBI Indian Country Crimes Unit), and The U.S. Marshals Service and the Office of the Inspector General; Department of Interior's Bureau of Land Management and Bureau of Indian Affairs Office of Justice Services; Department of Health and Human Services; Department of Homeland Security's Federal Emergency Management Agency, U.S. Customs and Border Protection, and U.S. Immigration and Customs Enforcement, Homeland Security Investigations (U.S. Department of Justice, 2017).

LEARNING OUTCOMES AND ASSESSMENT PLAN

Learning Outcome 1 (LO1):

Describe the foundational doctrines, principles, and rules that underlie the sovereign status of American Indian nations and their self-governing powers, including the laws and court decisions that define the term Indian Country and the unique government-to-government relationship that American Indian nations have with other governments;

- **Concepts:** Foundational areas of expertise, Including: legal definitions, historical and current use of the concepts of sovereignty, inherent tribal sovereignty, federal Indian law and appropriate U.S. Supreme Court and other court cases, rules of treaty construction, impact of treaties on crimes and criminal justice in Indian Country, Indian and Indigenous self-governance, jurisdiction in Indian Country, culturally appropriate justice services, federalism
- **Competencies:** Ability to summarize, describe and distinguish between the foundational doctrines, principles and rules of American Indian sovereignty and self-government, Indian Country, and the special government to government relationships between American Indian Nations and the federal government, and the state and local governments
 - Ability to apply federal, state and tribal laws, policies and procedures
 - Ability to analyze interpretations of federal, Indian nation, and state and criminal laws and policies that apply in Indian Country; U.S. Supreme Court decisions that establish rules for criminal jurisdiction in Indian Country, including those that address the question of who is an Indian; cross-deputation agreements; and the impact of treaties on crimes and jurisdiction in Indian Country
- **Measures/Assessment:** Assessment focuses on evaluating proficiency of knowledge acquisition through exams, and knowledge application through analytical assignments and research projects.

Learning Outcome 2 (LO2):

Describe the laws and policies that regulate the Indian Country work of criminal justice organizations, and that protect the rights of all persons who are affected by criminal laws in Indian Country;

- **Concepts:** eras of federal Indian policy, federal Indian laws, interaction and operation of criminal justice organizations, laws that determine the authority of federal, Indian nation, and state criminal justice providers in Indian Country; laws that protect the individual rights of criminal defendants in Indian Country
- **Competencies:** Ability to apply the appropriate laws and policies that regulate criminal justice organizations in Indian Country
- Ability to distinguish and analyze the appropriate human rights applicable to a given situation
- **Measures/Assessment:** Assessments focus on evaluating proficiency of knowledge acquisition through exams, and knowledge application through analytical assignments and research projects.

Learning Outcome 3 (LO3): 3). Demonstrate cultural competency in the cultures, religions, norms, and values of Indigenous peoples that criminal justice professionals must respect in order to serve Indigenous communities effectively

- **Concepts:** basic Indigenous justice values and norms as found in various Indigenous cultures, respect in intercultural and interpersonal communication in various Indigenous communities, Indigenous ontology, epistemology, and axiology, in their specific application to criminal justice delivery

- **Competencies:** demonstrate an understanding of basic Indigenous justice values and norms as found in various Indigenous cultures, ability to act and communicate respectfully in various Indian cultures. Ability to develop policy and apply recommendations to improve community well-being and criminal justice delivery, based on cultural and religious norms and values associated with specific Indigenous nations and communities.
- **Measures/Assessment:** Assessment focuses on evaluating proficiency of knowledge acquisition through exams, and knowledge application through analytical assignments and research projects.

Learning Outcome 4 (LO4): Analyze and describe the impact of historical relations between the U.S. and Indian nations on crime, victimization, and service delivery in Indian Country;

- **Concepts:** legal and jurisdictional frameworks, fiduciary responsibilities and repercussions, the jurisdictional maze in Indian Country, resource scarcity, Indigenous community resilience as a response to historical treatment of Indian nations and people
- **Competencies:** the ability to identify, analyze and describe particular impacts of historical process on crime, on victimization, and on justice service delivery in Indian Country
- Application of culturally appropriate justice services on Indigenous lands

Measures/Assessment:

- Assessment focuses on evaluating proficiency of knowledge acquisition through exams, and knowledge application through analytical assignments and research projects.

Learning Outcome 5 (LO5):

Summarize and differentiate the major social science perspectives about crime, criminalization, and victimization in Indian Country and apply them to critically analyze contemporary justice issues in Indian Country.

Concepts:

- Major social science theories about crime, criminalization and victimization in Indian Country, contemporary injustices in criminalization, and victimization in Indian Country

Competencies:

- Proficiency in summarizing and differentiating among the major social science perspectives about crime, criminalization, and victimization in Indian Country, and their application to the critical analysis of contemporary injustices in Indian Country.

Assessment:

- Assessment focuses on evaluating proficiency of knowledge acquisition through exams, and knowledge application through analytical assignments and research projects.

PROJECTED THIRD YEAR ENROLLMENT

45-55

ACADEMIC DEVELOPMENT PLAN

UNIVERSITY: Northern Arizona University



PROPOSED NEW ACADEMIC PROGRAM

NAME OF PROPOSED DEGREE:

Master of Science, Building Science
College of Engineering, Informatics, and Applied Sciences
Department of Civil Engineering, Construction Management, and Environmental
Engineering
Flagstaff, Arizona
Catalog year 2019-2020

PROGRAM FEE REQUIRED? YES NO

BRIEF DESCRIPTION:

A small number of innovative American universities have established graduate and/or undergraduate building science programs due to the current and future demand for building scientists. The proposed M.S. in Building Science degree at NAU will be an engineering-based graduate degree program, focused on helping students develop a knowledge base and skill set to meet this demand.

The program will be located in the 'living laboratory' that is the NAU Flagstaff campus which exists in a cold mountain climate zone. There is great potential in having a research-based building science graduate program located in a place with a diverse climatological gradient separated by relatively short geographical distances. These factors would make the M.S. in Building Science at NAU unique within the Arizona university system and distinguish the State among state university systems nationally.

According to the American Council for an Energy-Efficient Economy (ACEEE), readily deployable energy-efficiency measures can put the United States on the path of dramatically lower energy use—engineers and other related professionals will play a critical role in this transformation. For this to happen, it is essential that the students being trained today, and in the future, have a solid understanding of basic building science and outcome-based performance metrics.

Performance-based building codes have already been adopted in some regulatory jurisdictions. For instance ANSI/ASHRAE 189 requires Building Performance Analysis (whole building energy modeling) to be performed on all building designs to demonstrate and verify that the design meets or exceeds all required building performance metrics. Historically, building scientists are the trained professionals that perform this increasingly important work.

A recent article published by the Rocky Mountain Institute addresses the critical role that Net Zero Energy (NZE) buildings will play in the near future and specifically identifies three career paths: architecture, engineering and public policy, that are open to interested students. Presently, there are a limited number of university building science related programs available to meet this need. This proposed program aims to fill this void by training work-ready graduates to meet the market need.

LEARNING OUTCOMES AND ASSESSMENT PLAN:

Learning Outcome 1 (LO1): Students will evaluate the major theories, research methods and approaches to inquiry in Building Science, articulate significant challenges involved in practicing the field of study, elucidate its leading edges, and explore the current limits of theory knowledge and practice.

- **Concepts:** Foundational theories and methods in Building Science, including systems theory, building physics, building systems, human comfort, building performance analysis, properties of building materials, and financial analysis of building performance alternatives.
- **Competencies:** Ability to evaluate and articulate open research questions in the field and identify open research questions and promising research directions.
- **Measures and Assessment:** Core assignments rubric, exams rubric, Master's Project or Thesis assessment rubric

Learning Outcome 2 (LO2): Students will develop protocols, tools and organizational methods necessary to solve building science problems.

- **Concepts:** Problem definition and analytical tool development methods that are appropriate for the defined building science problem.
- **Competencies:** Ability to evaluate and state problems and develop theoretical and technical tools to solve those problems as defined.
- **Measures and Assessment:** core assignments rubric, exams rubric, Master's project or thesis assessment rubric

Learning Outcome 3 (LO3): Students will design, create and execute experiments (theoretical or experimental) and develop necessary analytical skills for interpretation and analysis of data to create data-supported conclusions.

- **Concepts:** Experimental design methods, data collection and analysis methods and tools.
- **Competencies:** Ability to design experiments and tools using problem-appropriate methods and interpreting the results within the larger context of an open research area.

- **Measures and Assessment:** Term Projects assessment rubric, Master's project or thesis assessment rubric

Learning Outcome 4 (LO4): Students will document and explain major theories, research methods and technical approaches to solving advanced building science problems to a variety of audiences.

- **Concepts:** Effective presentation of complex information using appropriate analytical, written, graphic and oral presentation means and methods.
- **Competencies:** Ability to identify and effectively utilize key tools, means and methods to analyze and communicate complex building science information.
- **Measures and Assessment:** Master's project or thesis assessment rubric

PROJECTED 3RD YEAR ENROLLMENT:

18

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ACADEMIC DEVELOPMENT PLAN

UNIVERSITY: Northern Arizona University



PROPOSED NEW ACADEMIC UNITS

NAME OF PROPOSED ACADEMIC UNIT:

The Department of Physics and Astronomy is currently housed in the College of the Environment, Forestry and Natural Sciences.

Effective July 1, 2019, the department will be split into two separate academic units: the Department of Applied Physics and Materials Science, which will be housed in the College of Engineering, Informatics and Applied Sciences, and the Department of Astronomy and Planetary Sciences will remain housed in the College of the Environment, Forestry and Natural Sciences

PROGRAM FEE REQUIRED? YES NO N/A

The Department of Physics and Astronomy currently offers a B.S. in Physics, B.S. in Astronomy, B.S in Physics and Astronomy, M.S. in Applied Physics, and Ph.D, in Astronomy and Planetary Science.

With the proposed split of the department, the B.S. in Physics, B.S. in Physics and Astronomy, the B.S. in Secondary Education-Physics, and M.S. in Applied Physics will be housed in the department of Applied Physics and Materials Science, alongside the newly-approved Ph.D. in Applied Physics and Materials Science.

The B.S. in Astronomy and Ph.D. in Astronomy and Planetary Science will be offered through the Department of Astronomy and Planetary Science.

In addition to the distinct program offerings, the two separated units will each support distinct research programs. The Department of Astronomy and Planetary Science will emphasize the use of ground- and space-based telescopes to study the Solar System and planetary surfaces. The Department of Applied Physics and Materials Science will emphasize the study of advanced functional materials and materials interfaces.

JUSTIFICATION

The proposed departmental split will enable both impacted departments to emphasize their respective areas of strength and focus on the success of their distinct programs and research agendas. Each unit will support its own flagship Ph.D. program—in addition to current and under-development undergraduate programs—and will be able to effectively respond to student and research needs with more agility.

The separation of current programs between the two units is driven by their curricular characteristics, guided by the principle of housing each program with the faculty that offer the majority of its courses.

NEW RESOURCES, IF ANY, AND SOURCE* SAVINGS/EFFICIENCIES GAINED

Existing operating budget will be split proportionately between the two departments to reflect enrollment, 73% Physics, 27% Astronomy.

Physics currently serves a total of 177 B.S. students and 13 M.S. students;
Astronomy served a total of 51 B.S. students and 19 Ph.D. students.