

# Complex Adaptive Systems Science (Graduate Certificate)

SUCASGRCT

Do you want to gain skills that serve as a bridge between disciplines? This will enable you to promote the collaborations needed for solving some of today's most pressing and complex global challenges.

## Program description

### **Degree awarded: Certificate Complex Adaptive Systems Science (certificate)**

Complex adaptive systems science is the study of interactive and dynamic systems that change over time, producing their own emergent properties. The complex adaptive systems science graduate certificate can be pursued along with any doctoral degree program at Arizona State University. Students in the certificate program pursue their chosen field of study while addressing intricate global challenges.

Complex adaptive system concepts and methods provide a common language that enables the interdisciplinary collaborations required for coming to grips with the intellectual and societal challenges of today's world. The program trains the next generation of scientists in advanced concepts and methods that are necessary for approaching diverse phenomena in the social and life sciences. The program is tightly integrated with diverse, ongoing university-wide research on complex adaptive system science at Arizona State University and emphasizes the value of a complex adaptive systems perspective to give science better insight and a more active role in seeking solutions to a broad array of critical issues facing society today. Students become fluent in the common language of complexity while also receiving a solid foundation in the domain knowledge of existing academic disciplines.

## At a glance

- **College/School:** [College of Global Futures](#)
- **Location:** [Downtown Phoenix](#), [Polytechnic](#), [Tempe](#)

# Degree requirements

15 credit hours

## Required Core (12 credit hours)

## Electives (3 credit hours)

## Additional Curriculum Information

Students should contact the academic unit about appropriate coursework. Students pursuing the certificate must have a [complex adaptive systems science faculty member](#) on their supervisory committee. They must also take three research hours in their doctoral discipline with a complex adaptive systems science faculty member.

# Admission requirements

Applicants must fulfill the requirements of both the Graduate College and the College of Global Futures.

Applicants are eligible to apply to the program if they are either enrolled in or accepted into an ASU doctoral degree program and they must be in good standing within the program.

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

All applicants must submit:

1. graduate admissions application and application fee
2. official transcripts
3. statement of intent
4. letter of support from an ASU faculty member (for existing ASU students) or other faculty member (for incoming students)
5. proof of English proficiency

## Additional Application Information

An applicant whose native language is not English must provide [proof of English proficiency](#) regardless of their current residency.

International students who need an F1 or J1 visa first need to apply to and be accepted into a graduate degree program prior to being considered for the certificate program. International students residing in the USA on other types of visas must adhere to all Graduate College policies and procedures regarding admission to be considered for admission to this certificate program.

## Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

## Application deadlines

Fall

Spring [expand](#)

[expand](#)

## Global opportunities

### Global experience

Studying abroad is encouraged for graduate students. Nearly all of the College of Global Futures faculty-directed programs offer graduate credit. In addition, the Global Education Office offers more than 50 program opportunities, with programs on every continent.

Faculty-directed programs tend to be the best fit for graduate students; taking courses with ASU professors over the summer or during academic breaks offers students close mentorship and professional network growth in many fields of study while they earn ASU credit. Exchange program participation is also possible with careful planning.

Students can find programs specific to their interests on the [College of Global Futures Study Abroad](#) webpage, and additional opportunities and information on the [ASU Global Education Office](#) website. These sites also include additional information about applying for funding to support global travel.

## Career opportunities

A complex systems approach to the program means graduates possess the ability to understand the interconnections within and between technological, economic, societal, biomedical and environmental systems and have developed advanced digital skills like modeling and network science. This gives them an edge in diverse careers in science, technology and data analytics, especially compared with peers in their field of study who lack such expertise.

Graduates who hold this certificate can apply the skills learned to any field or profession, although advanced degrees or certifications may be required. Career area examples include:

- business intelligence analytics
- consulting
- corporate social responsibility and sustainability
- data and microsystem engineering

- data science
- education
- military intelligence systems
- nongovernmental and nonprofit work
- policymaking in government and regulatory agencies
- research and development

## Contact information

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