

## IFT 420/560 Cloud Architecture for Information Technology

Course:	Credits & Prerequisites:
<b>IFT 420 &amp; IFT 560</b>	<b>Credit Hours: 3</b>
<b>Cloud Architecture for IT</b>	IFT 420 Prerequisites: IFT 320 with a C or better IFT 560 Prerequisites: IFT 510 with C or better
Semester & Session:	Meeting Times:
Fall 2024	ONLINE / Asynchronous
Instructor:	Office Hours:
Alexander Neff	Send an e-mail to the professor ( <a href="mailto:aaneff@asu.edu">aaneff@asu.edu</a> ) for a request for a conversation and he will accommodate you on your time to the best of his ability!  Once a week, the professor and TAs will run a session to help with labs. <ul style="list-style-type: none"><li>• Wednesdays 6pm to 7pm AZ time</li></ul> <b>Link:</b> <a href="https://asu.zoom.us/j/84702747521?pwd=MGNEUytYWk82MlhDUmtwNVRpTm1rdz09Links to an external site.">https://asu.zoom.us/j/84702747521?pwd=MGNEUytYWk82MlhDUmtwNVRpTm1rdz09Links to an external site.</a>  <b>Password:</b> 612169

### Section 1: Course Overview

#### Course Description

This course covers cloud design concepts such as cloud security, networking, databases, design patterns, and architecture. This class has a concentration on Amazon Web Services (AWS) and contains most of the materials needed to pass the AWS Certified Cloud Architect exam.

#### Course Overview

Cloud technology is very flexible in how it can be utilized within today's business environments. Leveraging the high level of customization and the rapid time to deployment allows for a high level of availability and scalability. This course provides an overview of the different methodologies, tactics, and tools used to build a well-architected cloud infrastructure. Students will understand how to deploy a fault-tolerant, efficient and scalable cloud infrastructure while taking into account important factors such as security, reliability, and cost control. Cloud automation, design patterns, and optimization will also be covered in this class.

This course leverages a collection of real-world labs leveraging AWS Academy. This class, its materials and the paired labs will provide all instruction students will need in order to pass the AWS Certified Solutions Architect - Associate certification exam. As a note, additional study is recommended if taking the certification exam!

### **Credits**

This is a 3 credit hour course.

### **Prerequisites**

IFT 420 Prerequisites: IFT 320 with a C or better

IFT 560 Prerequisites: IFT 510 with C or better

### **Program Student Outcomes**

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Use systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to accomplish user goals.

### **Course Learning Outcomes**

At the completion of this course, students will be able to:

1. Architect the entirety of a cloud infrastructure.
2. Assess and evaluate competing strategies for building cloud functionality.
3. Recommend cloud services to fulfill business needs.
4. Diagram abstract cloud patterns based on architectural need.
5. Analyze cost-savings techniques for cloud services.

### **Course Material**

#### Textbook Requirements

*AWS Certified Solutions Architect Study Guide: Associate SAA-CO3 Exam* (4th ed.). Ben Piper, David Clinton. (2022). Wiley.

**ISBN-13:** 978-1119982623

**ISBN-10:** 1119982626

### **Course Access**

Your ASU courses can be accessed by both [my.asu.edu](https://my.asu.edu) [Links to an external site.](https://asu.instructure.com/) and <https://asu.instructure.com/>; bookmark both in the event that one site is down.

## Computer Requirements

All classes have online components which requires you to have a computer with a modern Internet browser and consistent access to the internet. Please note that devices with small screens, such as Smartphones, often do not allow content to be viewed as intended. Therefore, small-screened devices are not usually suitable for review of content or online test taking.

- Web browsers ([Chrome](#), [Mozilla](#), [Firefox](#), or [Safari](#))
- [Adobe Acrobat Reader](#) (free)
- Webcam, microphone, headset/earbuds, and speaker
- Microsoft Office ([Microsoft 365 is free](#) for all currently-enrolled ASU students)
- Reliable broadband internet connection (DSL or cable) to stream videos.

Note: A smartphone, iPad, Chromebook, etc. will not be sufficient for completing your work in ASU Online courses. While you will be able to access course content with mobile devices, you must use a computer for all assignments, quizzes, and virtual labs.

## IFT Program - Required Computer Specifications

- You will be required to run a number of programs and software in order to progress through the program. These programs will have a myriad of required computer specifications to function properly.
- The following are general guidelines for computer specifications that should cover all classes.
- Note: M1-based Apple or M2-based Apple products are NOT x64 compatible.

Minimum:

- CPU: Any modern (2015+) x64 capable quad-core CPU or better
- RAM: 16GB RAM or more
- Disk Size: 512GB of available fast storage (eg. SSD) or more

[Engineering Technical Services \(ETS\)](#). [Links to an external site.](#) has partnered with Dell and Microsoft to provide computer recommendations to students. These recommendations are available here: <https://ets.engineering.asu.edu/2021/11/microsoft-dell-recommended-devices-for-students/>. [Links to an external site.](#)

## Technical Support

- This course uses Canvas to deliver content. It can be accessed through MyASU at <http://my.asu.edu>. [Links to an external site.](#) or the Canvas home page at <https://myasucourses.asu.edu>. [Links to an external site.](#)
- To monitor the status of campus networks and services, visit System Health Portal at <http://syshealth.asu.edu/>. [Links to an external site.](#)

- To contact the help desk call toll-free at 1-855-278-5080.

## **Campus Resources**

These resources can be used by on-campus and online students. There are many valuable resources on campus to help you achieve success both personally and academically. A few of these are listed here which are available on all campuses. You are able to interact with these services remotely:

- Writing centers – <https://tutoring.asu.edu/writing-centers>
- Tutoring, student success centers: <https://tutoring.asu.edu/tutoring>
- Counseling / consultation: <https://eooss.asu.edu/counseling>
- Career services: <https://eooss.asu.edu/cs>

## **Section 2: Course Policies**

### **Student Success**

To be successful:

- Read announcements.
- Read and respond to course email messages.
- Check your ASU email regularly.
- Read course materials.
- Complete assignments by the due dates specified.
- Communicate regularly with your instructor and peers.
- Create a study and/or assignment schedule to stay on track.
- Participate in all of the classroom sessions.
- Complete all pre-class preparation assignments and reading.
- Complete all post-class follow-up assignments and reading.
- Access [ASU Online Student Resources](#). [Links to an external site.](#)

### **Course Commitment**

- Manage the required [Course Time Commitment](#) [Links to an external site.](#)

Coursework includes all learning activities including reading, watching videos, studying, and completing assignments. Arizona Board of Regents requires 45 hours of coursework per credit for college-level courses: 3 credits is 135 hours.

## Content Management

- Any information in this syllabus may be subject to change with reasonable advance notice.
- Students may not share outside the class, including uploading, selling or distributing course content or notes taken during the conduct of the course.
- Any recording of class sessions by students is prohibited.
- The contents of this course, including lectures and other instructional materials, are copyrighted materials.
- Notes based on these materials may not be sold or commercialized without the express permission of the instructor. Based on [ACD 304-06.Links to an external site.](#)

## Grading

Grades reflect your performance on assignments and adherence to deadlines. Grades on assignments will be graded after the due date.

Grade will be determined based on the following grading schema:

## Grade Appeals

Grade disputes must first be addressed by discussing the situation with the instructor.

If the dispute is not resolved with the instructor, the student may appeal to the department chair per the University Policy for Student Appeal Procedures on Grades. <https://catalog.asu.edu/appeal.Links to an external site.>

## Submitting Assignments

All assignments, unless otherwise announced, MUST be submitted to the designated area of Canvas. Do not submit an assignment via email.

Assignment due dates follow Arizona Standard time. Click the following link to access the [Time Converter \(Links to an external site.\)](#) to ensure you account for the difference in Time Zones. Note: Arizona does not observe daylight savings time.

## Required Format

- Standard written English is always used in the ASU classroom.
- All written work is to be submitted in the appropriate professional APA style and format using APA Version 7th edition. Presentations include both citations and references attributing ownership of tables and diagrams.
- Assignment attachments are required to be in Microsoft Word (DOC or DOCX) or Portable Document Format (PDF).

- Large attachments (>10MB) should be submitted via a shared link from cloud storage (e.g. ASU student Google Drive (<https://drive.google.com>[Links to an external site.](#)– login with your ASU email address and credentials).

### **Late or Missed Assignments**

- Late assignments are not accepted.
- Note that technology issues/problems are not acceptable reasons for late work.
- Notify the instructor **BEFORE** an assignment is due if an urgent situation arises and you are unable to submit the assignment on time.
- Technological issues are not considered valid grounds for late assignment submission. In the event of an Arizona State Blackboard server outage, students will email assignments to the instructor and when systems are restored, submit those assignments according to syllabus instructions.
- Unless an Incomplete grade has been granted, learner assignments submitted after the last day of class will not be accepted.

### **Excused Absences**

Excused absences for classes will be given without penalty to the grade in the case of:

(1) a university-sanctioned event [[ACD 304-02](#)[Links to an external site.](#)][Links to an external site.](#);

(2) religious holidays [[ACD 304-04](#)[Links to an external site.](#)][Links to an external site.](#); a list of religious holidays can be found here <https://eoss.asu.edu/cora/holidays>[Links to an external site.](#) [Links to an external site.](#)];

(3) work performed in the line-of-duty according [[SSM 201-18](#)[Links to an external site.](#)][Links to an external site.](#).

Students who request an excused absences must follow the policy/procedure guidelines. Excused absences do not relieve students of responsibility for any part of the course work required during the period of absence.

### **Incomplete Grade for the Course**

- A grade of Incomplete can be given only under extreme circumstances, where an unforeseen situation prevents the student from completing all required assignments by the end of the session. This is a decision made only by the faculty member. Students must ask for the incomplete.
- A grade of Incomplete requires a contract and work must be made up within 4 weeks after the course, in which the student was enrolled, or the “I” will revert to an “E” and the course must be repeated.

### **Returning Final Projects**

- There are no provisions by ASU to return course materials to students. If students wish to claim their materials to be returned to them, they must provide a self-addressed envelope with adequate postage on the last day of class.
- Faculty may destroy any unclaimed student materials 90 days after the course has ended.

## **Communicating With the Instructor**

### **Community Forum**

This course uses a discussion topic called "Community Forum" for general questions and comments about the course. Prior to posting a question or comment, check the syllabus, announcements, and existing posts to ensure it's not redundant. You are encouraged to respond to the questions of your classmates.

Email questions of a personal nature to your instructor.

### **Email**

ASU email is an official means of communication among students, faculty, and staff. Students are expected to read and act upon email in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned email regularly. <http://www.asu.edu/aad/manuals/ssm/ssm107-03.html>. [Links to an external site.](#)

### **Class Participation for On-campus or Online**

- On-campus courses: All students are expected to assume the responsibility for regular class attendance. When absence is unavoidable, students should report the reason to the faculty member and assume the responsibility for any work they miss. Faculty members have no obligation to make special arrangements for students who have been absent unless the student has an Institutional Excuse. Students are responsible for regularly attending all courses in which they are enrolled.
- Where applicable, students are expected to be seated and ready for class to begin at the time posted at the head of this document. Students who are late or leave early without prior approval or without accommodation will not earn that session's available participation points.
- On-campus or Online - Students are expected to be prepared each week, with all required materials read, questions developed, and with the intent to discuss the course content with their instructor and cohort.

## **Section 3: Class Schedule**

### **Overview**

- Canvas has Course Summary that displays all the assignments and due dates.
- It is recommended that you use the Calendar in Canvas.

### **Grading Scheme**

<b>Assignments</b>	<b>Total Points</b>
Labs & Assignments	725
Quizzes	85
Discussion Questions	30
Final Project	150
Final Exam	100
	1090

### **Discussion Question**

Discussion Questions are closed after the due date. Late Policy does NOT apply to Discussion Question.

### **Quizzes**

- Each module has a quiz which is an assessment activity.
- Closed book and closed notes quizzes consisting of multiple-choice and true/false questions.
- You are allowed one attempt on each quiz.
- Quizzes require the use of test proctoring software.
- Quizzes are not eligible for Late Policy submission.
- Quizzes are timed.

### **Final Exam**

- Covers all the modules in this course.
- Closed book and closed notes exam consisting of multiple-choice and true/false questions.
- You are allowed one attempt for the exam.
- Final exam is timed.
- Final exam requires the use of test proctoring software.
- Final exam due date will be stated in Canvas.
- Final exam is not eligible for Late Policy submission.

### **Labs/Assignments**



- Each lab will provide an opportunity for students to engage with the course concepts with a hands-on example.
- Each assignment is an opportunity for students to apply the knowledge gained in their classwork.

### **Final Project**

- Final Project is an opportunity for students to apply the knowledge gained in their classwork.

### **Section 4: University Policies**

View the [ASU Online Course Policies](#). [Links to an external site.](#)

### **Student Professionalism**

Students in this class are expected to acknowledge and embrace the FSE student professionalism expectation located at: <https://engineering.asu.edu/professionalism/Links to an external site.>

### **Syllabus Disclaimer**

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the students.

Any information in this syllabus may be subject to change with reasonable advance notice. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Remember to check your ASU email and the course site often.

### **Classroom Behavior**

Cell phones and pagers must be turned off during class to avoid causing distractions. The use of recording devices is not permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students. See [SSM 104-02](#). [Links to an external site.](#), “Handling Disruptive, Threatening, or Violent Individuals on Campus.”

### **Plagiarism**

Although ASU encourages collaboration between students, and faculty, in the sharing of ideas and experiences, individual work needs to represent the student's original thought and be distinguishably different from other students' work. Copying from other people's work in part or in whole will result in a ZERO grade for the whole work. Recurring plagiarism will result in obtaining an XE and reporting each student's misconduct.

### **No Generative AI Use Permitted**

Generative AI is a technology that can often be useful in helping students learn the theories and concepts in this course. However, unless explicitly allowed by your instructor, the use of generative AI tools to complete any portion of a course assignment or exam will be considered academic

dishonesty and a violation of the ASU Academic Integrity Policy. Students confirmed to be engaging in non-allowable use of generative AI will be sanctioned according to the academic integrity policy and FSE sanctioning guidelines.

### **Academic Integrity**

All engineering students are expected to adhere to the ASU Student Honor Code and the ASU academic integrity policy, which can be found at <https://provost.asu.edu/academic-integrity/policy>). Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. If you have taken this course before, you may not reuse or submit any part of your previous assignments without the express written permission from the instructor.

All student academic integrity violations are reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). Withdrawing from this course will not absolve you of responsibility for an academic integrity violation and any sanctions that are applied. The AIO maintains a record of all violations and has access to academic integrity violations committed in all other ASU college/schools.

### **Student Copyright Responsibilities**

You must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the student first complies with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

The contents of this course, including lectures and other instructional materials, are copyrighted materials. Students may not share outside the class, including uploading, selling or distributing course content or notes taken during the conduct of the course. Any recording of class sessions by students is prohibited, except as part of an accommodation approved by the Disability Resource Center. (see [ACD 304-06Links to an external site.](#), [Links to an external site.](#) “Commercial Note Taking Services” and ABOR Policy [5-308 F.14Links to an external site.](#) [Links to an external site.](#) for more information).

### **Threatening Behavior Policy**

Students, faculty, staff, and other individuals do not have an unqualified right of access to university grounds, property, or services (see [SSM 104-02Links to an external site.](#)). Interfering with the peaceful conduct of university-related business or activities or remaining on campus grounds after a request to leave may be considered a crime. All incidents and allegations of violent or threatening conduct by an ASU student (whether on- or off-campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students.

### **Disability Accommodation**

Suitable accommodations are made for students having disabilities. Students needing accommodations must register with the ASU Student Accessibility and Inclusive Learning Services office ([SAILLinks to an external site.](#)) and provide documentation of that registration to the instructor. Students should communicate the need for an accommodation in enough time for it to

be properly arranged. See [ACD 304-08Links to an external site. Links to an external site.](#)Classroom and Testing Accommodations for Students with Disabilities.

## **Harassment and Sexual Discrimination**

Arizona State University is committed to providing an environment free of discrimination, harassment, or retaliation for the entire university community, including all students, faculty members, staff employees, and guests. ASU expressly prohibits discrimination, harassment, and retaliation by employees, students, contractors, or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, and genetic information.

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqsLinks to an external site..Links to an external site.>

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counselingLinks to an external site. Links to an external site.> is available if you wish to discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, <https://goto.asuonline.asu.edu/success/online-resources.htmlLinks to an external site..Links to an external site.>

Students who have accommodations for this course are encouraged to communicate with me as soon as possible to make appropriate arrangements.

## **Photo Consent**

Arizona State University [requiresLinks to an external site. Links to an external site.](#) each enrolled student and university employee to have on file with ASU a current photo that meets ASU's requirements (your "Photo"). ASU uses your Photo to identify you, as necessary, to provide you educational and related services as an enrolled student at ASU. If you do not have an acceptable Photo on file with ASU, or if you do not consent to the use of your Photo, your access to ASU resources, including access to classes (online or in person) may be negatively affected or denied.