

# Certificate in Information Technology, Data Analytics and Cybersecurity

---

In addition to the M.S. in Information Technology (MSIT) degree, we offer IT certificate programs that can be acquired separately from the Master's program. The Certificate in IT Management, Certificate in Data Analytics, and Certificate in Cybersecurity are 4-course, affordable options for professionals looking to build specialized skills in these specific areas.

Students who wish to transfer these courses into the MSIT program may do so, subject to academic limits as outlined in the University's Graduate Academic Policies. Students must first apply and be admitted to the MSIT program and then formally request the transfer.

## Admission Requirements

Candidates for admission to the IT Management, Data Analytics, or Cybersecurity certificate programs should provide the Graduate Enrollment Office with the following:

1. A completed application form and non-refundable application fee
2. Evidence of an interview with an admission counselor
3. Official transcripts showing a bachelor's degree from a regionally accredited U.S. institution. Normally, a grade point average of approximately 3.0 or higher in upper division undergraduate work is expected.

At a minimum, all students entering the certificate programs need to have completed the following courses which are pre-requisites into the program:

- Java/Object Oriented Programming
- Business Statistics
- Enterprise Management, Organization, and Strategy (IT Management Certificate only)

These courses are offered at Cal Lutheran (and are not part of the certificate program). Relevant work experience in the IT field will also be considered.

An undergraduate degree in information systems, business, computer science, engineering, math, physics, and other natural sciences or related fields is required for admission to the program. Students with other backgrounds will be considered based on their work experience and/or completion of pre-requisite courses as noted above.

International students (who have completed a degree outside of the US) need to submit English proficiency requirements such as TOEFL of minimum 88 or IELTS of minimum 6.5.

## Program Completion Time

The certificate can be completed in as little as six months, and is based on a sequence of four 3-unit graduate courses for a total of twelve credits. This requires enrollment for at least two terms, based on 11-week term schedules. The completion time does not account for any pre-requisite courses a student may need.

## Certificate in IT Management

The Certificate in IT Management focuses on the managerial aspects of information technology and is suitable for students who would like to become IT Managers, IT Project Managers, IT Consultants, IT Strategists, Chief Information Officers (CIO), or Chief Technology Officers (CTO), among others.

You will be prepared to create IT strategies that support the business, innovate with IT, and manage projects, as well as develop and maintain the IT architecture and infrastructure of an organization.

Specifically, by completing the certificate program in IT Management, students will be able to:

- Understand the methods used to design and implement IT solutions in modern organizations
- Learn how to manage IT strategically in order to gain or sustain competitive advantage and business value
- Design the IT governance, architecture and infrastructure in modern organizations
- Learn about project management phases, knowledge areas, tools and techniques and their applications
- Strategically manage emergent technologies in modern organizations

Take these 2 required courses:

IT 508	Information Technology Management	3
IT 512	Project Management	3

Take 2 elective courses from the following:

IT 509	Data Management	3
IT 510	Software Planning and Development	3
IT 511	Data Communications and Networking	3
IT 513	Information Security	3
IT 514	Distributed Systems	3
IT 520	IT Strategy and Business Value	3
IT 521	Healthcare Information Technologies	3
IT 522	Enterprise Systems	3
IT 523	IT Architecture and Infrastructure	3
IT 524	Emergent Technologies and Issues	3
IT 582	Special Topic (IT Management)	3
IT 599	IT Project (IT Management)	3

## Certificate in Data Analytics

Data analytics is the systematic analysis and interpretation of data using various computational and statistical tools in order to support decision-making based on the scientific method.

This program will prepare you to create, develop and implement data models as well as work with big data sets using a real-world data cluster managed in-house to derive insights and make recommendations.

Specifically, by completing the certificate program in Data Analytics, students will be able to:

- Understand the general framework surrounding data management, analytics and big data
- Assess organizational data and information requirements and construct data models
- Develop an ability to effectively clean, manipulate and visualize large volumes of data
- Apply machine learning and statistical tools to big data sets
- Make data-driven decisions based on analytics techniques
- Write professional reports and present findings to target audiences

Take this required course:

IT 509	Data Management	3
--------	-----------------	---

Take 3 courses from the following:

IT 530	Principles of Data Analytics	3
IT 531	Data Mining	3
IT 532	Data Warehouse/Bus Intelligence	3
IT 533	Big Data Technologies	3
IT 582	Special Topic (Data Analytics)	3
IT 599	IT Project (Data Analytics)	3

## Certificate in Cybersecurity

The Certificate in Cybersecurity will prepare students to devise strategies and protect organizational assets from cyberattacks.

This program is suitable for students who would like to become Cybersecurity Analysts, Threat Analysts, Cybersecurity Auditors, Cybersecurity Risk Managers, or Cyber Forensics Analysts, among others.

After completing the certificate program in Cybersecurity, students will be able to assess information security risks and develop and implement solutions to protect organizational systems from cyber threats through offensive and defensive planning and incident response.

Take this required course:

IT 513	Information Security	3
--------	----------------------	---

Take 3 courses from the following:

IT 540	Digital Forensics	3
IT 542	Ethical Hacking	3
IT 544	Cloud Security	3
IT 546	Cybersecurity Risk Management	3
IT 582	Special Topic (Cybersecurity)	3
IT 599	IT Project (Cybersecurity)	3

Note: IT 531 or IT 533 may be applied to the cybersecurity certificate in place of one elective requirement. The remaining 9 credits of the certificate must be cybersecurity courses.