**Certificate Program in Communications and Networking**

**Department of Information Systems**

**California State University, Los Angeles**

The Department of Information Systems offers an undergraduate credit certificate in Communications and Networking designed to prepare individuals for computer network management positions or other positions that require sophisticated knowledge of designing, installing, configuring and maintaining computer networks. The program consists of a minimum of 15 units including 6 units of required courses and 9 units of elective courses. Refer to [Undergraduate Studies: General Information](http://ecatalog.calstatela.edu/content.php?catoid=10&navoid=703) for general regulations governing all certificate programs.

**Requirements for the Certificate (15 units)**

Required courses (6 units)

CIS 4100 – Hardware and Software Architecture (3)

CIS 4840 – Communications Systems (3) **or** TECH 4210 – Internetworking Technology (3)

**Electives (9 units)**

Select 9 units from the following:

* [CIS 4220 - Routing Configuration and Router Administration](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)
* [CIS 4230 - Intermediate Routing and LAN Switching](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)
* [CIS 4240 - Wide Area Networks](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)
* [CIS 4720 - Wireless Communications and Networks](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)
* [CIS 4730 - Network Security Essentials and Practice](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)
* [CIS 4850 - Computer Networks](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)
* [CIS 4880 - Information Security](http://ecatalog.calstatela.edu/preview_program.php?catoid=11&poid=4895&returnto=738) (3)  
  (Others with adviser approval)