CSDB 110  Introduction to SQL (3)
2 hours lecture-2 hours lecture/laboratory
Transfer acceptability: CSU
Intended for individuals who want to learn how to search for and manipulate data in a database, create tables and indexes, handle security, control transaction processing, and learn the basics of how to design a database.

CSDB 120  SQL Database Design (2)
2 hours lecture-2 hours laboratory
Prerequisite: A minimum grade of "C" in CSDB 110
Transfer acceptability: CSU
Provides training in administering and implementing Microsoft SQL Server.

CSDB 140  Introduction to Oracle (3)
2 hours lecture-2 hours lecture/laboratory
Transfer acceptability: CSU
An introduction to relational database concepts including the design and creation of database structures to store, retrieve, update and display data.

CSDB 150  Oracle Database Design (3)
2 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSDB 140
Transfer acceptability: CSU
A top-down, systematic approach to the development of Oracle relational databases.

CSDB 210  SQL Server Administration (2)
1 1/2 hours lecture-1 hour lecture/laboratory
Prerequisite: A minimum grade of "C" in CSDB 110
Transfer acceptability: CSU
Provides the knowledge and skills necessary to administer and troubleshoot information systems that incorporate Microsoft SQL Server Enterprise Edition.

CSDB 220  SQL Server Programming (3)
2 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSDB 120
Transfer acceptability: CSU
Provides the knowledge and skills necessary to design, implement, and program database solutions by using Microsoft SQL Server.

CSDB 240  Oracle DBA I (3)
2 hours lecture-2 hours laboratory
Prerequisite: A minimum grade of "C" in CSDB 140
Transfer acceptability: CSU
Design, create, and maintain an Oracle database; gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another; and learn how to create an operational database and properly manage the various structures in an effective and efficient manner. Topics are reinforced with structured hands-on practices.

CSDB 241  Oracle DBA II (3)
2 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSDB 240
Transfer acceptability: CSU
Transporting data between databases, and the utilities to perform these activities. Introduction to networking concepts and configuration parameters, as well as how to solve some common network problems. In hands-on exercises, configure network parameters so that database clients and tools can communicate with the Oracle database server. Addresses backup and recover techniques, and examines various backup, failure, restore and recovery scenarios. Examine backup methodologies based on business requirements in a mission critical enterprise. Use multiple strategies and Oracle Recover Manager to perform backups, and restore and recover operations.

CSDB 250  Oracle Performance Tuning (3)
2 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSDB 240
Transfer acceptability: CSU
Introduction to the importance of good initial database design and the method used to tune a production Oracle  database. The focus is on database and instance tuning rather than specific operating system performance issues. Practical experience tuning an Oracle database. Recognize, troubleshoot, and resolve common performance related problems in administering an Oracle database.

CSDB 260  Oracle PL/SQL Programming (3)
2 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSDB 150
Transfer acceptability: CSU
Learn the Oracle PL/SQL language, a flexible procedural extension to SQL, which increases productivity, performance, scalability, portability and security. Use PL/SQL's tight integration with Oracle database that allows application developers to build and deploy distributed applications with considerable flexibility. Learn how to utilize advanced techniques to design PL/SQL applications to solve complex business problems.

Computer Science and Information Systems - Information Technology (CSIT)

See also CSIS - Computer Science, CSIS - Database, CSIS - Networking, and CSIS - Web Technology

Contact the Computer Science and Information Systems Department for further information.
(760) 744-1150, ext. 2387
Office: ST 6
http://www.palomar.edu/csis

Associate in Arts Degrees -
AA Degree requirements are listed in Section 6 (green pages).
• Information Technology

Certificates of Achievement -
Certificate of Achievement requirements are listed in Section 6 (green pages).
• Information Technology

Certificates of Proficiency -
Certificate of Proficiency requirements are listed in Section 6 (green pages).
• Microsoft Office User Specialist
• Visual Basic
• Web 2.0

PROGRAMS OF STUDY

Information Technology

This program prepares students for employment in information systems applications development in business and industry. The focus is on developing skills in programming languages, Internet, spreadsheets, databases, presentation graphics, word processing, in systems analysis and design, project management, and database design. See a counselor for additional university transfer requirements in this major.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements | Units
--- | ---
CSIT 105  Computer Concepts and Applications | 3
CSIT 120/ | 
R CSIS 120  Computer Applications | 3
CSIT 170  Visual Basic I | 4
CSIT 290  Systems Analysis and Design | 4

Students must receive a grade of "C" or better in each course that applies to an A.A. Degree Major or Certificate
Microsoft Office User Specialist

The Microsoft Office User Specialist (MOUS) Program is a validation program that provides proof of proficiency in Microsoft Office applications. It is available for Microsoft Office applications at both Proficient and Expert User levels. As a general rule of thumb, Proficient Specialists can handle a wide range of everyday tasks with ease. Expert Specialists are expected to do all those everyday tasks, plus handle more complex assignments that require more advanced formatting and functionality.

Users who attain Expert Specialist status on all five core Office applications (Word, Excel, Access, PowerPoint and Outlook) qualify to take the Microsoft Office Integration Exam. Passing this exam demonstrates that the user is not only an expert in the individual Office products, but is also skilled in integrating them into a cohesive whole. This entitles the user to be called a Microsoft Office Expert.

CERTIFICATE OF PROFICIENCY

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIT 131 Word</td>
<td>1</td>
</tr>
<tr>
<td>CSIT 132 Excel</td>
<td>1</td>
</tr>
<tr>
<td>CSIT 133 PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CSIT 134 Outlook</td>
<td>1</td>
</tr>
<tr>
<td>CSIT 135 Access</td>
<td>1</td>
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<tr>
<td>TOTAL UNITS</td>
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</table>

Visual Basic

This certificate is designed for individuals interested in acquiring the advanced programming skills necessary to design and implement Visual Basic programs.

CERTIFICATE OF PROFICIENCY

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSIT 170 Visual Basic I</td>
<td>4</td>
</tr>
<tr>
<td>CSIT 270 Visual Basic II</td>
<td>4</td>
</tr>
<tr>
<td>CSIT 271 Visual Basic III</td>
<td>4</td>
</tr>
<tr>
<td>CSWB 210 Active Server Pages</td>
<td>3</td>
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<tr>
<td>TOTAL UNITS</td>
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</tbody>
</table>

Web 2.0

Program will offer students the opportunity to explore cutting edge technologies of the World Wide Web.

CERTIFICATE OF PROFICIENCY

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSIT 70 Web 2.0 – The Web's Edge</td>
<td>3</td>
</tr>
<tr>
<td>CSIT 74 Gmail</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL UNITS</td>
<td></td>
</tr>
</tbody>
</table>
CSIT 120  Computer Applications  (3)
1 hour lecture-4 hours lecture/laboratory
Note: Cross listed as R CSIS 120; may be taken 4 times; maximum of 4 completions in any combination of CSIT/R CSIS 120, CSIT 121
Transfer acceptability: CSU
Hands-on experience with microcomputers and microcomputer applications featuring the use of Windows, word processing, spreadsheet, database, and presentation graphics software.

CSIT 121  Advanced Computer Applications  (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSIT/R CSIS 120
Transfer acceptability: CSU
Hands-on experience with advanced microcomputer applications featuring the use of word processing, spreadsheet, database and presentation graphics software.

CSIT 130  Windows Vista  (1)
2 hours lecture/laboratory
Note: May be open entry/open exit
Transfer acceptability: CSU
Overview of Windows Vista operating system. Explore the resources provided by the Windows Vista operating system; manage files, documents and folders; run programs and gadgets; explore communication and scheduling; explore the Internet; set up printers; customize Windows Vista; maintain security; and manage Windows Vista.

CSIT 131  Word  (1)
2 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
Intended for individuals seeking the fundamental and advanced skills of Microsoft Word word processing software. Prepares individuals who are seeking to become a Microsoft Word Proficient Specialist and Microsoft Word Expert Specialist.

CSIT 132  Excel  (1)
2 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
Intended for individuals seeking the fundamental and advanced skills of Microsoft Excel spreadsheet software. Prepares individuals who are seeking to become a Microsoft Excel Proficient Specialist and Microsoft Excel Expert Specialist.

CSIT 133  PowerPoint  (1)
2 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
Intended for individuals seeking the fundamental and advanced skills of Microsoft PowerPoint graphics software. Prepares individuals who are seeking to become a Microsoft PowerPoint Expert Specialist.

CSIT 134  Outlook  (1)
2 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
Introduction of fundamental and advanced skills of Microsoft Outlook software. Helps prepare individuals who are seeking to become a Microsoft Outlook Proficient Specialist and Microsoft Outlook Expert Specialist.

CSIT 135  Access  (1)
2 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
Intended for individuals seeking the fundamental and advanced skills of Microsoft Access database software. Helps prepare individuals who are seeking to become a Microsoft Access Proficient Specialist and Microsoft Access Expert Specialist.

CSIT 170  Visual Basic I  (4)
3 hours lecture-2 hours lecture/laboratory
Transfer acceptability: CSU
Design, create, test and run computer applications using Visual Basic. Emphasis is on learning the fundamentals of the Visual Basic interface and how to solve problems using structured design logic and the sequence, decision and repetition procedural language control structure. Selected additional features of the Visual Basic interface and procedural language are included to provide a foundation for the study of more advanced courses.

CSIT 180  C# Programming I  (3)
2 hours lecture-2 hours lecture/laboratory
Transfer acceptability: CSU; UC
Provides the knowledge and skills necessary to use the C# programming language in the .NET Framework. Build Windows applications and server-side programs; access data with ADO.NET; use C# with Web Forms and .NET CLR.

CSIT 197  Topics in Information Technology  (5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Note: May be taken 4 times
Transfer acceptability: CSU
Topics in Information Technology. See class schedule for specific topic offered. Course title will designate subject covered.

CSIT 270  Visual Basic II  (4)
3 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSIT 170
Transfer acceptability: CSU
An intermediate-level programming language which provides for building special purpose Windows applications using the Graphical User Interface of Windows. Includes extensive practice using programming logic control structures in designing algorithms and a wide array of Visual Basic objects in implementing the three-step approach to building Windows applications in Visual Basic.

CSIT 271  Visual Basic III  (4)
3 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSIT 270
Transfer acceptability: CSU
Advanced course in Visual Basic programming. Special emphasis will be placed on the application of the Visual Basic language to solve business problems including requirements definition, design, construction, testing and documentation. Multiple forms, objects, controls, object linking and embedding (OLE), and the use of the data control object to interface with databases external to Visual Basic will be covered.

CSIT 280  C# Programming II  (3)
2 hours lecture-2 hours lecture/laboratory
Prerequisite: A minimum grade of "C" in CSIT 180
Transfer acceptability: CSU; UC
Provides intermediate-level knowledge and skills necessary to use the C# programming language. Topics include language syntax, data types, operators, exception handling, casting, string handling, data structures, collection classes and delegates. Programming of windows-based applications is presented along with object-oriented programming that includes classes, methods, polymorphism and inheritance. Event-driven programming is discussed along with the C# development and execution environment.

CSIT 290  Systems Analysis and Design  (4)
3 hours lecture-2 lecture/laboratory
Prerequisite: A minimum grade of "C" in CSIT 170 or CSCI 110 or CSCI 220
Transfer acceptability: CSU; UC
Specific projects, problems, and systems. Application of appropriate programming languages and the use of analytical tools in solving case studies and problems.

CSIT 295  Directed Study in Information Technology  (1,2,3)
3, 6, or 9 hours laboratory
Prerequisite: Approval of project or research by department chairperson/director
Note: May be taken 4 times
Transfer acceptability: CSU; UC (pending) - Credit determined by UC upon review of course syllabus.

Designed for the student who has demonstrated a proficiency in Information Technology subjects and the initiative to work independently on a particular sustained project which does not fit into the context of regularly scheduled classes.

Computer Science and Information Systems - Networking (CSNT)
See also CSIS - Computer Science, CSIS - Database, CSIS - Information Technology, and CSIS - Web Technology

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Office: ST 6
http://www.palomar.edu/csis

Associate in Arts Degrees -
AA Degree requirements are listed in Section 6 (green pages).
• Computer Network Administration with Emphasis in Cisco and Linux Management
• Computer Network Administration with Emphasis in Cisco and Microsoft Management
• Computer Network Administration with Emphasis in Microsoft and Linux Management

Certificate of Proficiency requirements are listed in Section 6 (green pages).
• Cisco
• Desktop Support Specialist - MCSA
• Network Engineer - MCSE

Programs of Study
Cisco
The Cisco networking program is designed to teach students the skills needed to design, build, and maintain small to medium-sized networks. This provides students the opportunity to enter the workforce and/or further their education and training in the computer-networking field.

Certificate of Proficiency

Program Requirements Units
CSNT 160 Cisco Networking Fundamentals 3
CSNT 161 Cisco Router Configuration 3
CSNT 260 Cisco Advanced Routing/Switching 3
CSNT 261 Cisco WAN Design/Support 3

TOTAL UNITS 12

Computer Network Administration with Emphasis in Cisco and Linux Management


A.A. Degree Major or Certificate of Achievement

Program Requirements Units
CSNT 110 Hardware and O.S. Fundamentals 3
CSNT 111 Networking Fundamentals 3
CSNT 120 Windows Client 3
CSNT 121 Windows Server 3
CSNT 140 Linux Administration 2
CSNT 141 Linux Networking and Security 2
CSNT 160 Cisco Networking Fundamentals 3
CSNT 161* Cisco Router Configuration 3
CSNT 180 Wireless Networking 3
CSNT 181 Hacker Prevention/Security 3
CSNT 260 Cisco Advanced Routing and Switching 3
CSNT 261 Cisco Wide Area Network Design and Support 3
CSCI 108 Survey of Computer Science 4
CSCI 130 Linux Fundamentals 2

TOTAL UNITS 40

* Note: CSNT 160 is a prerequisite for CSNT 161

Computer Network Administration with Emphasis in Cisco and Microsoft Management


A.A. Degree Major or Certificate of Achievement

Program Requirements Units
CSNT 110 Hardware and O.S. Fundamentals 3
CSNT 111 Networking Fundamentals 3
CSNT 120 Windows Client 3
CSNT 121 Windows Server 3
CSNT 160 Cisco Networking Fundamentals 3
CSNT 161* Cisco Router Configuration 3
CSNT 180 Wireless Networking 3
CSNT 181 Hacker Prevention/Security 3
CSNT 221 Windows Infrastructure Administration 3
CSNT 230 Design Windows Active Directory & Infrastructure 2
CSNT 260 Cisco Advanced Routing and Switching 3
CSNT 261 Cisco Wide Area Network Design and Support 3
CSCI 108 Survey of Computer Science 4
CSCI 130 Linux Fundamentals 2

TOTAL 41

* Note: CSNT 160 is a prerequisite for CSNT 161

Computer Network Administration with Emphasis in Microsoft and Linux Management

This program prepares the student for employment in the field of Computer Networking. The focus is on developing skills in a combination of the network Technologies produced by Microsoft and Linux/Unix.