Regional Occupational Program (ROP)

Palomar College, under contract with the San Diego County Office of Education, offers vocational and technical training through the Regional Occupational Program.

Courses provided through ROP are available to college and high school students, out-of-school youths, and adults residing in San Diego County. Courses can be used for basic job skills, upgrading of existing skills, or changing occupations. Units earned may be used for high school or college credit. ROP courses taken for college credit may be applied toward Palomar College Certificates/Degrees. For more information, contact the ROP Office in AA 136 or call (760) 744 1150, ext. 2293.

Air Conditioning, Heating and Refrigeration (R ACR)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAM OF STUDY

Air Conditioning, Heating and Refrigeration

Prepares students for entry-level positions as air conditioning, heating, and refrigeration technicians. Also provides retraining and upgrading of skills for maintenance technicians, including EPA certification.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R ARC 50	AC, Heating, and Refrigeration: Electrical	4
R ACR 55	AC, Heating, and Refrigeration: Mechanical	4
R ACR 56	Adv AC/Heating/Refrigeration	4
R ARC 58	Refrigerant Recovery	1
TOTAL UNITS		**13**

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

R ACR 50   **Air Conditioning, Heating and Refrigeration: Electrical**   **(4)**
8 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Introduction to the fundamentals and application of electrical theory as related to air conditioning, heating and refrigeration. Study of basic electrical theory, alternating current, electrical controls, motors, schematics, and electrical meters.

R ACR 55   **Air Conditioning, Heating and Refrigeration: Mechanical**   **(4)**
8 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Introduction to basic mechanical theory of air conditioning, heating and refrigeration. Application of principles and techniques to include system components and their interrelated functions, safety procedures, tools, and equipment.

R ACR 56   **Advanced Air Conditioning, Heating and Refrigeration**   **(4)**
8 hours lecture/laboratory
Prerequisite: R ACR 50 and 55

Note: Graded only; may be taken 2 times
Advanced principles and techniques of air conditioning, heating and refrigeration. EPA regulations and safety requirements; complex control systems; gas furnace combustion and air requirements; and the installation, troubleshooting, repair, and maintenance of residential and small commercial units.

R ACR 58   **Refrigerant Recovery**   **(1)**
2 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Basic understanding of the United States Environmental Protection Agency regulations as set forth under Section 608 of the Clean Air Act of 1990, which described requirements for recycling ozone-depleting refrigerants. Preparation to take the EPA certification exam, which is administered at the conclusion of the course.

R ACR 97   **Air Conditioning, Heating, and Refrigeration Topics**   **(.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: Graded only; may be taken 4 times
Topics in Air Conditioning, Heating, and Refrigeration. See Class Schedule for specific topic offered. Course title will designate subject covered.

Automotive Technology (R AT)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAM OF STUDY

Auto Body Work

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
R AT 50	Auto Body Repair I	4
R AT 51	Auto Body Repair II	4
R AT 55	Auto Refinishing I	4
R AT 56	Auto Refinishing II	4
Elective Courses (Select 6 Units)		
AT 100	Auto Maintenance and Minor Repair	3
AT 105	Automotive Electricity	2
IT 100	Technical Mathematics	3
WELD 100	Welding I	2
CE 100	Cooperative Education	1,2,3,4
TOTAL UNITS		**22**

Auto Body Work A.A. Degree or Certificate of Achievement is also listed under Automotive Technology.

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

R AT 50   **Auto Body Repair I**   **(4)**
8 hours lecture/laboratory
Note: Graded only; may be taken 3 times
Automotive body work with emphasis on repair. Includes welding; working with small damage points; restoring contour of body panels and sections; and realigning bumpers, fenders, doors, and hoods.

     To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

R AT 51   **Auto Body Repair II**   **(4)**
8 hours lecture/laboratory
Recommended preparation: R AT 50
Note: Graded only; may be taken 3 times
Automotive body work with emphasis on increasing diagnostic, estimating and repair skills and updating techniques and related technologies. Introduction to collision industry standards including I-CAR and ASE.

R AT 55   **Auto Refinishing I**   **(4)**
8 hours lecture/laboratory
Note: Graded only; may be taken 3 times
Introduction to auto refinishing. Preparation of auto surfaces for refinishing: taping, cleaning, and sanding. Refinishing auto surfaces: sanding, application of primers and paint.

R AT 56   **Auto Refinishing II**   **(4)**
8 hours lecture/laboratory
Recommended preparation: R AT 55
Note: Graded only; may be taken 3 times
Skills development in automotive refinishing techniques including base-coat clear-coat application. Color matching concepts. Identification, prevention and correction of painting problems. Update on new products, techniques, and trends.

R AT 90   **Automotive Upholstery**   **(4)**
8 hours lecture/laboratory
Note: Cross listed as R UP 90; graded only; may be taken 2 times
Skills and techniques required to replace, repair or customize automotive and related upholstery. Fabrication of interiors and accessories for automobile interiors, watercraft and other recreational vehicles. Techniques and considerations related to auto alarm or sound system installation. Students will complete individual or group projects.

R AT 97   **Auto Body Repair/Auto Refinishing Topics**   **(.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: Graded only; may be taken 4 times
Topics in auto body repair and auto refinishing. See Class Schedule for specific topic offered. Course title will designate subject covered.

Computer Science and Information Systems (R CSIS)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAMS OF STUDY

Applications Support Specialist

This program prepares students for employment as technicians supporting software applications such as Microsoft Office Suite in a help desk environment. Building on applications proficiency, it includes supporting coursework in computer hardware, operating systems, web site development and customer support fundamentals.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R CSIS 65	Held Desk Fundamentals	2
R CSIS/CSIS 120	Microcomputer Applications	3
R CSIS/CSIS 137	Web Site Development with XHTML	2
R CSIS 157 or	Windows XP: Professional/Server	
R CSIS 158	Windows 2000	3

R CSIS/CSIS 170	Windows	1
R CSIS 172	Windows for Technicians	2
TOTAL UNITS		**13**

Computer Technology

This program prepares students for employment in various areas of business and industry requiring technical support for stand-alone and networked computer systems. It is designed to provide the basics of computer hardware and software theory and application, familiarity with a variety of operating systems and the fundamentals of networking. Hands-on labs with an emphasis on problem-solving and troubleshooting provide opportunities for the application of theoretical knowledge to real and simulated system malfunctions.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
R CSIS/CSIS 120	Microcomputer Applications	3
R CSIS 140	Command Line Operations	3
R CSIS/CSIS 145	Introduction to Linux	3
R CSIS 155	Computer Technology – Hardware	3
R CSIS 156 or	Computer Technology – Software	
CSIS 108	Hardware and O.S. Fundamentals	3
R CSIS 157	Windows XP: Professional/Server	3
R CSIS 158 or	Windows 2000	
CSIS 162 and	Windows Client	3
CSIS 163	Windows Server	3
R CSIS 160 or	Introduction to Local Area Networking	3
CSIS 111	Networking Fundamentals	3
R CSIS 172	Windows for Technicians	2

Electives (Select a minimum of 6 units)		
R CSIS 65	Help Desk Fundamentals	2
R CSIS/CSIS 137	Web Site Development with XHTML	2
R CSIS 159	Industry Certification: Review and Prep	1
CSIS 160	Survey of Computer Science	4
R CSIS 161	PC/Network Security	3
R CSIS 169	Overview of Computer Forensics	3
ECHT 100	Electronic Components and Circuits	4.5
ECHT 203	Digital/Computer Electronics	4.5
TOTAL UNITS		**31 - 35**

Microcomputer Operating Systems

Prepares students for employment in various areas of microcomputer support, specifically operating systems and software installation and support. Focus on client and server applications of Microsoft Windows user and server operating systems. Includes evolution of operating systems, upgrade and transition to emerging industry standards.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R CSIS 140	Command Line Operations	3
R CSIS 158	Windows 2000	3
R CSIS/CSIS 170	Windows	1
R CSIS 172	Windows for Technicians	2
R CSIS 157	Windows XP; Professional and Server	3
TOTAL UNITS		**12**

Microcomputer Technology

Prepares students for entry-level positions supporting, maintaining and repairing stand-alone and networked microcomputer systems.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R CSIS 140	Command Line Operations	3
R CSIS 155	Computer Technology - Hardware	3
R CSIS 156	Computer Technology - Software	3
R CSIS 160	Introduction to Local Area Networking	3
TOTAL UNITS		**12**

PC Repair Technician

Prepares students for mid-level positions as PC Repair Technician. Focus on microcomputer structure and Windows operating system. Students will develop skills in component
identification, preparation and setup; memory system and
repair; power supplies; multiple hard disk preparation, testing and installation; current technology trends and troubleshooting and customer relations.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R CSIS 156	Computer Technology - Software	3
R CSIS 159	Industry Certification: Review & Preparation	1
R CSIS 172	Windows for Technicians	2
TOTAL UNITS		**6**

PC Support Technician

Prepares students for entry-level positions as PC Support Technician. Instructional focus on installation, upgrade, maintenance, and repair of microcomputers to the modular level.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R CSIS 140	Command Line Operations	3
R CSIS 155	Computer Technology - Hardware	3
TOTAL UNITS		**6**

Software Applications Specialist

Prepares students for employment in positions that require competence in software applications common to business and industry.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirement		Units
R CSIS 109	QuickBook Overview	1
R CSIS/CSIS 120	Microcomputer Applications	3
R CSIS 121	Microcomputer Applications – Advanced	3
R CSIS/CSIS 137 *or*	Web Site Development with XHTML	
R CSIS 138	Website Design with FrontPage	2
R CSIS/CSIS 170	Windows	1
R CSIS 186	Contemporary Job Search	1
TOTAL UNITS		**11**

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

R CSIS 65   Help Desk Fundamentals   (2)
4 hours lecture/laboratory
Recommended preparation: R CSIS 121 and 172 or 157 or 158
Note: Graded only
A comprehensive overview of the Help Desk environment. Builds on basic software and hardware knowledge to provide entry-level training in computer user support. Includes critical skills in professionalism; communication; call management, customer service and related job stress. Hands-on simulations enable students to identify and troubleshoot a variety of commonly occurring problems.

R CSIS 97   Computer Science and Information Systems Topics   (.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: Graded only; may be taken 4 times
Topics in Computer Science and Information Systems. See Class Schedule for specific topic offered. Course title will designate subject covered.

R CSIS 109   QuickBooks Overview   (1)
2 hours lecture/laboratory
Note: Graded only; may be taken 3 times
Transfer acceptability: CSU
Overview and application of QuickBooks to set up and manage bookkeeping/accounting records for small businesses.

R CSIS 116   Introduction to Computers   (2)
1 hour lecture-2 hours lecture/laboratory
Note: Graded only
Transfer acceptability: CSU
Introduction to basic computer operations and the Windows operating system for students with little or no background in computer science. Includes terminology and techniques as well as keyboarding and mouse functions. Also includes: window management; creating and managing files and folders; performing basic system maintenance using Windows accessory programs; word processing; and accessing the Internet.

R CSIS 120   Microcomputer Applications   (3)
1 hour lecture-4 hours lecture/laboratory
Note: Cross listed as CSIS 120; graded only; may be taken 4 times; maximum of 4 completions in any combination of CSIS/R CSIS 120, CSIS 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.

R CSIS 121   Microcomputer Applications - Advanced   (3)
1 hour lecture- 4 hours lecture/laboratory
Prerequisite: R CSIS/CSIS 120
Note: Graded only; may be taken 2 times
Transfer acceptability: CSU
This course builds upon fundamental knowledge of Windows operating system and Microsoft Office Suite (Word, Excel, Access and PowerPoint) to progress into advanced functions of each element as well as integration of various elements.

R CSIS 125   Presenting with PowerPoint   (1)
2 hours lecture/laboratory
Recommended preparation: R CSIS/CSIS 170
Note: Graded only
Transfer acceptability: CSU
Comprehensive study and application of PowerPoint multimedia capabilities to create effective audience-focused presentations, live and web-based. Preparation of documents in various formats to include: animated slideshows, speaker notes, audience handouts, outlines and web sites.

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

R CSIS 127   Word Processing Software – Basic   (1)
2 hours lecture/laboratory
Recommended preparation: A keyboarding speed of 20 net words a minute
Note: Graded only; may be taken 4 times
Transfer acceptability: CSU
Study of word processing skills using Microsoft Office. Course includes file creation, modification, and formatting, saving and printing files, graphics, report generation elements, and integration of Word documents within the Office suite. Hands-on labs using state of the art software are an integral part of this course, as well as guided instruction.

R CSIS 130   Microsoft Publisher   (1)
2 hours lecture/laboratory
Recommended preparation: R CSIS 170 and R CSIS 127 or BUS 170 or OIS 136.1
Note: Cross listed as BUS 186; graded only, may be taken 4 times.
Hands-on applications of Microsoft Publisher, a comprehensive software package that combines text, graphics, illustrations, and photographs to produce typeset quality documents for local printer output or commercial printing. Includes: news-letters; brochures; flyers; web pages; business cards; letterheads and envelopes; advertising and marketing materials; greeting cards; PDF and web file formats; and printing options.

R CSIS 137   Web Site Development with XHTML   (2)
4 hours lecture/laboratory
Note: Cross listed as CSIS 137; graded only
Transfer acceptability: CSU
This course provides a foundation to Internet/Intranet technologies. This course primarily teaches the skills required to develop and publish web sites utilizing XHTML, including using HTML tables, frames, web page forms, and basic CSS (Cascading Style Sheets).

R CSIS 138   Website Design with FrontPage   (2)
4 hours lecture/laboratory
Recommended preparation: R CSIS/CSIS 137
Note: Graded only
Comprehensive study of web site development and maintenance using Micro-soft FrontPage. Includes creation of web pages, application of design elements; comparison of search engines, familiarity with source code, and use of interactive forms to create client databases. Also includes uploading, testing and modifica-tion of web site.

R CSIS 140   Command Line Operations   (3)
6 hours lecture/laboratory
Note: Graded only
Introduction to the basic principles of computer operating systems and command line operations, using DOS (Disk Operating System) as a foundation. Includes: introduction to computer hardware; comparative overview of operating systems; managing files, disks and directories; batch files; controlling peripherals; disk main-tenance, optimization and data recovery; and configuring system environment.

R CSIS 145   Introduction to Linux   (3)
6 hours lecture/laboratory
Note: Cross listed as CSIS 145; graded only
Transfer acceptability: CSU
An overview of the Linux operating system, utilities, and associated applications for workstations. Includes installation, configuration and troubleshooting of Linux Systems within the command-line environment and the graphical X-Windows environment.

R CSIS 150   Computer Spreadsheets   (3)
6 hours lecture/laboratory
Note: Graded only
Transfer acceptability: CSU
In-depth study of the varied applications of spreadsheets using Microsoft Excel. Create, modify, format and maintain multiple page worksheets; enter numeric and text data for manipulation; and create and copy formulas. Includes integration of Excel spreadsheets within Microsoft Office Suite. Hands-on experience in networked lab.

R CSIS 155   Computer Technology – Hardware   (3)
6 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Introduction to the basic principles of computer hardware architecture and design. Hands on course includes microcomputer design, assembly and troubleshooting, Course content aligns with objectives of the A+ certification core exam.

R CSIS 156   Computer Technology – Software   (3)
6 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Prerequisite: R CSIS 140
Fundamentals of computer operating systems and Local Area Network (LAN). Hands-on approach to installing, troubleshooting, and supporting operating systems, networking fundamentals, and preparation for the A+ OS certification exam.

R CSIS 157   Windows XP: Professional and Server   (3)
6 hours lecture/laboratory
Recommended preparation: R CSIS/CSIS 170
Note: Graded only; may be taken 2 times
Transfer acceptability: CSU
A focused study of Microsoft Windows XP Professional and Server operating systems. Includes hands-on experience installing, configuring, optimizing, main-taining and troubleshooting Windows XP Professional on stand-alone and client computers in workgroup or domain environment. Study of Windows.NET Server includes setup and configuration of Active Directory Service.

R CSIS 158   Windows 2000   (3)
6 hours lecture/laboratory
Recommended preparation: R CSIS/CSIS 170
Note: Graded only; may be taken 2 times
Core knowledge and skills for supporting Microsoft Windows 2000 operating system. Includes installing, configuring, customizing, optimizing, networking, inte-grating, and troubleshooting.

R CSIS 159   Industry Certification: Review and Preparation   (1)
2 hours lecture/laboratory
Note: Graded only; may be taken 2 times
A focused study of industry and professional certifications available for PC tech-nicians. Review of Microsoft, Novell, and CTIA certification programs. Content review and preparation for A+ Certification Examination.

R CSIS 160   Introduction to Local Area Networking   (3)
6 hours lecture/laboratory
Prerequisite: R CSIS 155 and 156
Note: Graded only; may be taken 2 times
Introduction to the basic principles of Local Area Networking (LAN) structure and function. Hands-on experience in design, construction, installation, mainte-nance and repair to the modular level using operating systems and diagnostic hardware and software.

R CSIS 161   PC/Network Security   (3)
6 hours lecture/laboratory
Note: Graded only
Comprehensive overview of computer security, including stand-alone and net-worked systems. Includes: fundamentals of network security principles and implementation; e-mail, web and data transmission security; infrastructure se-curity; cryptography; and operational/ organizational security, including disaster recovery.

R CSIS 169   Overview of Computer Forensics   (3)
6 hours lecture/laboratory
Prerequisite: R CSIS 161
Note: Graded only
Introduction to computer forensics and investigation including digital information recovery and analysis. Includes hands-on exercises, case studies and discussion of computer forensic ethics. Course content aligns with the objectives of the Inter-national Association of Computer Investigative Specialists (IACIS) certification.

R CSIS 170   Windows   (1)
2 hours lecture/laboratory
Note: Cross listed as CSIS 170; graded only
Transfer acceptability: CSU
Fundamentals of Windows Graphical User Interface. Students will develop proficiency in: changing desktop settings; file/folder management at both desktop and Explorer levels; and basic system maintenance.

R CSIS 172   Windows for Technicians   (2)
4 hours lecture/laboratory
Recommended preparation: R CSIS/CSIS 170
Note: May be taken 2 times; graded only
A technical study of the Windows operating system; hands-on experience installing, configuring, optimizing, maintaining, and troubleshooting.

R CSIS 175   Excel   (1)
2 hours lecture/laboratory
Note: Graded only; may be taken 2 times; graded only
Transfer acceptability: CSU
Study of spreadsheets using Microsoft Excel. Course includes creating spreadsheets, formatting data, manipulating data, creation and application of formulas, charting data, and printing considerations. Preparation for the Excel MOS certification exam.

R CSIS 180   Access   (1)
2 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Transfer acceptability: CSU
Study of Access database program within the Microsoft Office Suite. This class introduces and reinforces the creation, modification and
maintenance of Access databases. Students will create the database structure, enter data in tables, execute queries, generate reports and forms, modify properties and layout at the design level and maintain the database. Preparation for the Access MOUS certification exam.

R CSIS 186   Contemporary Job Search Techniques   (1)
2 hours lecture/laboratory
Note: Graded only
Use the Internet, current software and research tools to organize and implement a job search. Includes: online resources; preparation and posting of application materials, including resume and cover letters; interview strategies and mock interviews; industry speakers, and hard copy and online portfolios.

Culinary Arts (R CUL)
See also Culinary Arts

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAMS OF STUDY

Culinary Arts

Prepares students for employment and career opportunities in various areas of the foodservice industry. The focus is on food preparation and production skills, with supporting coursework in nutrition, food sanitation and safety, menu planning, purchasing and inventory control, kitchen management and employee supervision. Practical hands-on lab activities in a commercial kitchen environment and directed workplace learning opportunities prepare students for foodservice positions in resorts, casinos, and fine dining establishments.

Students will need to possess a current San Diego County Food Handler Card to participate in kitchen/lab activities.

In order to earn a certificate or degree, students must achieve a minimum grade of 'C' in each of the certificate program courses.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
FCS/MICR 110	Microbiology and Foods	3
FCS/HE 165	Fundamentals of Nutrition	3
R CUL/CUL 110	Culinary Essentials I	3
R CUL/CUL 111	Culinary Essentials II	3
R CUL/CUL 120	Patisserie and Baking I	3
R CUL/CUL 121	Patisserie and Baking II	3
R CUL/CUL 130	Pantry/Garde Manger	3
R CSIS/CSIS 120	Microcomputer Applications	3
R CUL/CUL 200	Menu Planning and Purchasing	2
R CUL/CUL 210	Foodservice Management	3
R CUL/CUL 220	Catering and Event Planning	3
R CUL/CUL 298	Culinary Directed Practice I	3
R CUL/CUL 299	Culinary Directed Practice II	3

Electives (Select a minimum of 3 units)

R CUL/CUL 115	Dining Room Service	2
R CUL/CUL 150	International Cuisine	3
R CUL/CUL 230	Adv Garde Manger/Competition	3
R CUL/CUL 240	Wines and Affinities	1
TOTAL UNITS		**41**

Culinary Skills

With a focus on basic food preparation and production skills, nutrition, and food safety and sanitation, the program prepares students for various entry-level positions in the foodservice industry. Practical hands-on lab activities in a modern commercial kitchen environment provide opportunities for students to master the skills required for employment.

Students will need to possess a current San Diego County Food Handler Card to participate in required kitchen/lab activities.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
FCS/MICR 110	Microbiology and Foods	3
FCS/HE 165	Fundamentals of Nutrition	3
R CUL/CUL 110	Culinary Essentials I	3
R CUL/CUL 111	Culinary Essentials II	3
R CUL/CUL 130	Pantry/Garde Manger	3
R CUL/CUL 115	Dining Room Service	2
TOTAL UNITS		**17**

Patisserie and Baking

With a focus on commercial baking and pastry making, the program prepares students for entry-level positions in bakeries, restaurants, resorts and casino operations. Practical hands-on lab activities in a modern commercial kitchen environment provide opportunities for students to master the skills required for employment.

Students will need to possess a current San Diego County Food Handler Card to participate in required kitchen/lab activities.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
FCS/MICR 110	Microbiology and Foods	3
FCS/HE 165	Fundamentals of Nutrition	3

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

R CUL/CUL 120	Patisserie and Baking I	3
R CUL/CUL 121	Patisserie and Baking II	3
TOTAL UNITS		**12**

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

R CUL 110   Culinary Essentials I   (3)
1 hour lecture-4 hours laboratory
Prerequisite: Current San Diego County Food Handler Card
Recommended preparation: FCS/MICR 110
Note: Cross listed as CUL 110; graded only
Transfer acceptability: CSU
Introduction to culinary arts and the foodservice industry. Fundamentals of food preparation and production, emphasizing industry standards. Lab work will focus on knife skills, standard cuts, and preparation of vegetables and starches. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 111   Culinary Essentials II   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: R CUL/CUL 110
Note: Cross listed as CUL 111; graded only
Transfer acceptability: CSU
Advanced food production, including meat and protein fabrication. Lab work will include: stocks, sauces and soups; meat and game; poultry; fish and seafood; breakfast foods and classical cuisine. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 115   Dining Room Service   (2)
4 hours lecture/laboratory
Prerequisite: Current San Diego County Food Handler Card
Note: Cross listed as CUL 115; graded only
Orientation to dining room operations with an emphasis on dining room service, techniques of table waiting, and dining room skills. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 120   Patisserie and Baking I   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: Current San Diego County Food Handler Card
Recommended preparation: FCS/MICR 110
Note: Cross listed as CUL 120; graded only; may be taken 2 times
Fundamentals of baking, including ingredient properties and function, and preparation and evaluation of a variety of yeast products, quick breads, cookies, cakes, pies and pastries. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 121   Patisserie and Baking II   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: R CUL/CUL 120
Note: Cross listed as CUL 121; graded only; may be taken 2 times
Advanced skills in the art of patisserie. Includes classic pastries, pâte à choux, and meringues; plated desserts; and cake decorating. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 130   Pantry/Garde Manger   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: Current San Diego County Food Handler Card
Recommended preparation: R CUL/CUL 110
Note: Cross listed as CUL 130; graded only
Introduction to cold food preparation and display. Includes salads, dressings, sandwiches and canapés. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 150   International Cuisine   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: Current San Diego County Food Handler Card
Note: Cross listed as CUL 150; graded only

A hands-on cooking, tasting and evaluating exploration of the major cuisines of the world. Includes Asian, Latin, European and American cuisines with a focus on the cultures that influenced their development. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 197   Culinary Arts Topics   (.5-3)
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: Cross listed as CUL 197; may be taken 4 times
Transfer acceptability: CSU
Topics in Culinary Arts. See Class Schedule for specific topic offered. Course title will designate subject covered.

R CUL 200   Menu Planning and Purchasing   (2)
2 hours lecture
Prerequisite: R CUL/CUL 111 and FCS 165/HE 165 and R CSIS/CSIS 120
Note: Cross listed as CUL 200; graded only
Transfer acceptability: CSU
Basic principles of menu planning and purchasing with emphasis on: menu design; specifications and pricing; purchasing, inventory control and storeroom operations; and food and beverage cost control. Includes spreadsheet and database applications. Students will be expected to meet high standards of professionalism and work habits.

R CUL 210   Foodservice Management   (3)
3 hours lecture
Prerequisite: R CUL/CUL 111
Note: Cross listed as CUL 210; graded only
Introduction to foodservice management with emphasis on human relations and employee development. Includes operational planning and coordination, problem-solving and decision-making, and personnel management. Students will be expected to meet high standards of professionalism and work habits.

R CUL 220   Catering and Event Planning   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: R CUL/CUL 111 and R CUL/CUL 130
Note: Cross listed as CUL 220; graded only
Transfer acceptability: CSU
Fundamentals of catering, including event planning, menu development and banquet preparation. Includes opportunities to apply culinary theory and skills in actual practice. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 230   Adv Garde Manger/Competition   (3)
1 hour lecture-4 hours lecture/laboratory
Prerequisite: R CUL/CUL 111 and R CUL/CUL 130
Note: Cross listed as CUL 230; graded only
Application of advanced garde manger techniques in practical situations and culinary competition. Includes classical buffet presentation, decorative displays and artistic centerpieces. Students will be expected to meet high standards of professionalism, sanitation and work habits.

R CUL 240   Wines and Affinities   (1)
1 hour lecture
Prerequisite: R CUL/CUL 111
Note: Cross listed as CUL 240; graded only
Classification and identification of wines, with emphasis on properties and affinities with food. Includes wines from various regions of the world. Students will be expected to meet high standards of professionalism and work habits.

R CUL 298   Culinary Directed Practice I   (3)
3 hours lecture-10 hours laboratory
Prerequisite: R CUL/CUL 111 and R CUL/CUL 130 or R CUL/CUL 121
Note: Cross listed as CUL 298; graded only
Directed learning opportunity for culinary arts students to increase their knowledge and skill in the areas of hot and cold food production through supervised on-the-job training. Students will be expected to follow Culinary Arts standards of professionalism. Current San Diego County Food Handler Card and TB clearance required.

R CUL 299　　**Culinary Directed Practice II**　　(3)
3 hours lecture-10 hours laboratory
Prerequisite: R CUL/CUL 298, R CUL/CUL 200, FCS 110/MICR 110 and FCS 165/HE 165
Note: Cross listed as CUL 299; graded only
Directed entry-level professional work experience in the foodservice industry that provides exposure to the foodservice industry and an opportunity for culinary arts students to practice and demonstrate their employability skills and reflect on their future roles in the industry. Students will be expected to follow Culinary Arts standards of professionalism. Current San Diego County Food Handler Card and TB clearance required.

Diesel Mechanics Technology (R DMT)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAM OF STUDY

Diesel Technology

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
AT 105	Automotive Electricity	2
AT 197	Associated Studies in Automotives	3
R DMT/DMT 50	Introduction to Diesel Mechanics	3
R DMT/DMT 55	Heavy-Duty Diesel Tune-up/ Engine Analysis	3
R DMT/DMT 61	Diesel Engine Rebuilding I	3
R DMT/DMT 62	Diesel Engine Rebuilding II	3
R DMT/DMT 65	Air Brake Systems	3
R DMT/DMT 66	Truck Transmission and Drive Lines	3
IT 100	Technical Mathematics	3

Electives (Select 6 units)		
AT 125	Automotive Machining	3
DMT 54	Heavy-Duty Electricity	3
DMT 56	Alternative Fuels	3
R DMT/DMT 70	Medium-Duty Diesel Engine Tune-up	3
DMT 81	Basic Hydraulics	3
DMT 96	Special Problems in Diesel Technology	.5-3
R DMT/DMT 97	Diesel Mechanics Technology Workshop	.5-3
WELD 100	Welding I	3
CE 100	Cooperative Education	1,2,3,4

TOTAL UNITS		**32**

Diesel Technology A.A. Degree Major or Certificate of Achievement is also offered in Diesel Mechanics Technology

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

R DMT 50　　**Introduction to Diesel Mechanics**　　(3)
6 hours lecture/laboratory
Note: Cross listed as DMT 50; graded only
Theory and practice of fundamental skills for the maintenance and operation of basic diesel engines. Topics for study include: basic theory of operation; engine applications; engine lubricating and cooling; intake, exhaust and fuel systems; and electronic control.

R DMT 55　　**Heavy-Duty Diesel Tune Up and Engine Analysis**　　(3)
2 hours lecture-4 hours laboratory
Prerequisite: DMT 50/R DMT 50
Note: Cross listed as DMT 55; graded only; may be taken 2 times
The use of software and diagnostic equipment in performing diesel tune-up. Topics include: theory of operation, tune-up procedures, fuel system function and repair, diagnostic equipment usage, electronic engine controls, mechanical and electronic engine system troubleshooting.

R DMT 61　　**Diesel Engine Rebuilding I**　　(3)
6 hours lecture/laboratory
Recommended preparation: R DMT/DMT 50
Note: Cross listed as DMT 61; graded only; may be taken 2 times
Theory and practice in rebuilding diesel engines. Topics for study include disassembly, cleaning, inspection, and analysis of engine parts. Also included are cylinder head service, sleeve and piston service, advanced machining and measuring techniques.

R DMT 62　　**Diesel Engine Rebuilding II**　　(3)
6 hours lecture/laboratory
Prerequisite: R DMT/DMT 61
Note: Cross listed as DMT 62; graded only
Theory and practice in rebuilding diesel engines. Topics for study include final cleaning, inspection and reassembly of engine parts. Also included are assembly measuring, torque procedures and torque-turn methods used on engine assembly, and engine testing upon completion of assembly.

R DMT 65　　**Air Brake Systems**　　(3)
2 hours lecture-3 hours laboratory
Note: Cross listed as DMT 65; graded only
The service and repair of heavy duty hydraulic and air brake systems and their components. Topics of study include brake troubleshooting, complete system repair, anti skid brake system, and related axle services.

R DMT 66　　**Truck Transmission and Drive Line**　　(3)
2 hours lecture-3 hours laboratory
Note: Cross listed as DMT 66; graded only
Service and repair of heavy duty truck drive lines. Topics for study include the disassembly, inspection, and reassembly of single and multiple disc clutches, four to fifteen speed transmissions, universal joints, and differentials.

R DMT 70　　**Medium Duty Diesel Engine Tune Up**　　(3)
2 hours lecture-4 hours laboratory
Note: Cross listed as DMT 70; graded only; may be taken 2 times
The use of diesel tune up and diagnostic equipment. Topics include: fuel systems; compression testing; fuel pump and injection timing; troubleshooting procedures; alternators, regulators, and starting systems.

R DMT 97　　**Diesel Mechanics Technology Workshop**　　(.5-3)
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: Cross listed as DMT 97; graded only; may be taken 4 times
A special selection of topics specific in nature. The contents will vary depending on specific needs of the students and community.

Drafting Technology (R DT)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

R DT 125   **AutoCAD Introduction to**
                Computer Aided Drafting   **(3)**
6 hours lecture/laboratory
Note: Cross listed as DT 125; may be taken 2 times; maximum of 4 completions in any combination of DT/R DT 125, DT/R DT 126, DT/R DT 127
Transfer acceptability: CSU; UC – R DT 125 and 126 combined: maximum credit, one course
An introduction to computer aided drafting using AutoCAD software and IBM compatible computers. Hands on experience with AutoCAD to include the following operations: preparing and editing drawings, storage and retrieval of drawings, and production of commercial quality drawings on a plotter. Introductory computer terminology and techniques in Windows.

R DT 126   **AutoCAD Intermediate**
                Computer Aided Drafting   **(3)**
6 hours lecture/laboratory
Prerequisite: DT/R DT 125
Note: Cross listed as DT 126; may be taken 2 times; maximum of 4 completions in any combination of DT/R DT 125, DT/R DT 126, DT/R DT 127
Transfer acceptability: CSU; UC – R DT 125 and 126 combined: maximum credit, one course
Advanced theory and hands on operation of a CAD system. Emphasis is placed on large scale drawings, three dimensional software techniques, orthographic projections, and complex computer aided manufacturing applications.

R DT 127   **AutoCAD Customization**   **(3)**
6 hours lecture/laboratory
Prerequisite: R DT/DT 125
Note: Cross listed as DT 127; may be taken 2 times; maximum of 4 completions in any combination of DT/R DT 125, DT/R DT 126, DT/R DT 127
Transfer acceptability: CSU
Advanced theory and hands on operation of a CAD system. Emphasis is placed on increased productivity, using customization and portfolio presentation for successful career opportunities.

R DT 128   **SolidWorks Introduction to**
                3D Design and Presentation   **(3)**
6 hours lecture/laboratory
Prerequisite: DT/R DT 125
Recommended preparation: DT 110
Note: Cross listed as DT 128; may be taken 2 times
Transfer acceptability: CSU
Advanced theory and hands on operation of three-dimensional software techniques. Emphasis is placed on wireframe, surface, solid, and parametric three-dimensional modeling.

R DT 130   **CAD/CAM Machining**   **(3)**
6 hours lecture/laboratory
Prerequisite: DT 110 and DT/R DT 128
Note: Cross listed as DT 130; graded only; may be taken 2 times
Hands-on operation of importing three-dimensional solid and parametric three-dimensional models into CAD/CAM operations.

R DT 131   **SolidWorks Advanced**
                3D Design and Presentation   **(3)**
6 hours lecture/laboratory
Prerequisite: DT/R DT 128
Note: Cross listed as DT 131; may be taken 2 times
Transfer acceptability: CSU
Advanced theory and hands-on operation of solid and parametric three-dimensional models. Emphasis is placed on creating molds, advanced sheet metal design and developing dynamic assemblies.

R DT 200   **Advanced Computer Aided**
                Architectural Drafting   **(4)**
8 hours lecture/laboratory
Prerequisite: DT/R DT 125 and completion of, or concurrent enrollment in, DT 105
Note: Cross listed as DT 200; graded only; may be taken 2 times

Transfer acceptability: CSU
Advanced techniques in the operation of AutoCAD software for architectural applications on IBM-compatible computers. Preparation of various architectural working drawings from a preliminary residential design.

R DT 202   **Advanced Computer Aided**
                Architectural Drafting II   **(4)**
8 hours lecture/laboratory
Recommended preparation: DT/R DT 200
Note: Cross listed as DT 202; graded only; may be taken 2 times
Transfer acceptability: CSU
Third-party architectural software for use in conjunction with AutoCAD software. Preparation of 3D architectural models and their manipulation for preparation of individual architectural working drawings including: dimensioned floor plans, building sections, elevations, etc.

Graphic Communications - Imaging & Publishing (R GCIP)
See also Graphic Communications and
Graphic Communications - Multimedia & Web

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

R GCIP 103   **Acrobat for Print**   **(3)**
(Formerly R GC 248)
6 hours lecture/laboratory
Note: Cross listed as GCIP 103; may be taken 4 times
Transfer acceptability: CSU
Hands-on instruction in creating and editing high quality, print-ready PDF files using Adobe Acrobat. This course also includes the estimating of materials and labor relative to current industry practices for the production of a printed product.

R GCIP 140   **Digital Imaging/Photoshop I**   **(3)**
(Formerly R GC 140)
6 hours lecture/laboratory
Note: Cross listed as GCIP 140; graded only; may be taken 4 times
Transfer acceptability: CSU
The study of digital imaging and editing with Adobe Photoshop for visual, pictorial and graphic use in all media. Emphasis on creating and enhancing imagery for effective use in mass communication mediums.

R GCIP 149   **Page Layout and Design I**   **(3)**
(Formerly R GC 149)
6 hours lecture/laboratory
Note: Cross listed as GCIP 149; may be taken 4 times
Transfer acceptability: CSU
Introduction to electronic document design and page layout, electronic composition, text and graphics entry with computers. Students will create a variety of projects including but not limited to: brochures, flyers, and newsletters.

R GCIP 152   **Desktop Publishing/Illustrator I**   **(3)**
(Formerly R GC 152)
6 hours lecture/laboratory
Note: Cross listed as GCIP 152; graded only; may be taken 4 times
Transfer acceptability: CSU
Introduction to electronic layout on the microcomputer. Illustrator will help the student generate new images or convert bitmapped images into PostScript. Quality levels needed for electronic output will be evaluated.

R GCIP 170   Screen Printing (3)
(Formerly R GC 170)
 hours lecture/laboratory
Note: Cross listed as GCIP 170; graded only; may be taken 4 times
Transfer acceptability: CSU
Screen printing theory and application of layout and image preparation, computer applications, stencil methods, process camera and basic screen printing techniques. Practical application is stressed.

R GCIP 172   Textile Screen Printing (3)
(Formerly R GC 172)
6 hours lecture/laboratory
Note: Cross listed as GCIP 172; graded only; may be taken 3 times
Transfer acceptability: CSU
Theory and application of screen printing for textile use. Copy preparation for multicolor reproduction, color matching, ink selection, and mesh and stencils for material compatibility.

R GCIP 197A   Topics in Graphic Communications (.5-4)
(Formerly R GC 197A)
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: Cross listed as GCIP 197A; graded only; may be taken 3 times
Transfer acceptability: CSU
Short term or special topic course, lecture or laboratory courses in various topics in Graphic Communications.

R GCIP 249   Page Layout and Design II (3)
(Formerly R GC 249)
6 hours lecture/laboratory
Prerequisite: GCIP/R GCIP 140 and GCIP/R GCIP 149
Note: Cross listed as GCIP 249; may be taken 4 times
Transfer acceptability: CSU
Intermediate concepts of electronic document layout, typography, and graphics. Software capabilities in creating sophisticated graphic and type treatments.

R GCIP 260   Portfolio Development and Presentation (3)
(Formerly R GC 260)
6 hours lecture/laboratory
Prerequisite: R GCIP/GCIP 140 and/or R GCIP/GCIP 152
Note: Cross listed as GCIP 260; graded only; may be taken 2 times
Students will develop a personal portfolio to showcase their graphic skills and techniques. Various resources, including the Internet, will be used to conduct a job search, develop a resume and learn interviewing techniques. Guest speakers will share industry tips. Students will practice presentation and interviewing skills, with feedback from professionals working in graphics and related industries.

Graphic Communications - Multimedia & Web (R GCMW)
See also Graphic Communications and
Graphic Communications - Imaging & Publishing

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

R GCMW 101   Multimedia I (3)
(Formerly R GC 200)
6 hours lecture/laboratory
Note: Cross listed as GCMW 101; graded only; may be taken 4 times

Transfer acceptability: CSU
Introduction to multimedia authoring software combining text, graphics, sound, animation, video clips, and user interface to produce effective visual presentations.

R GCMW 102   Web Page Layout I (3)
(Formerly R GC 202)
6 hours lecture/laboratory
Note: Cross listed as GCMW 102; graded only; may be taken 4 times
Transfer acceptability: CSU
A hands-on introduction to page layout for the Internet. Typographic considerations, screen layout, graphical interfaces, and structured page design for effective Internet communications.

R GCMW 103   Interactive Publishing with PDF's (3)
(Formerly R GC 203)
6 hours lecture/laboratory
Note: Cross listed as GCMW 103; graded only; may be taken 4 times
Transfer acceptability: CSU
This hands-on course looks at a comprehensive range of print, Web, and multimedia features in Adobe Acrobat for creating and distributing electronic documents reliably and securely. Topics and projects include e-books, forms, editing, prepess, accessibilty, capture, and a variety of methods to convert and repurpose documents.

Optical Technology (R OT)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAM OF STUDY

Optical Technology

Prepares students for entry-level positions as optical dispensing technicians, optical lab technicians, optometric assistants, ophthalmic assistants, and other occupations in the vision care field.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Required Courses		Units
R OT 50	Optical Technology I	8
R OT 55	Optical Technology II	8
TOTAL UNITS		**16**

Recommended Electives: R OT 60, 97

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

R OT 50   Optical Technology I (8)
6 hours lecture-6 hours laboratory
Note: Graded only
Basic theory of light and optics; anatomy and function of the eye; spectacle frame and lens design and fabrication; tools of the trade; and dispensing skills for optical technicians.

R OT 55   Optical Technology II (8)
6 hours lecture-6 hours laboratory
Prerequisite: R OT 50

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

Note: Graded only
In-depth study of anatomy and function of the eye. Advanced theories of light, lenses, mirrors, and optics. Specialized dispensing skills. Topic preparation for the American Board of Opticianry (ABO) certification exams.

R OT 70   Ophthalmic Medical Assisting I   (2)
4 hours lecture/laboratory
Prerequisite: R OT 50
Note: Graded only
Introduction to assisting in the ophthalmic medical environment. Topics include ophthalmic exam, ophthalmic drugs, structure, function and common diseases of the eye and related tissues, optics and refraction, ocular motility and visual fields. Course content aligns with national certification standards for Certified Ophthalmic Assistant (COA) as set forth by the Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO).

R OT 75   Ophthalmic Medical Assisting II   (2)
4 hours lecture/laboratory
Prerequisite: R OT 70
Note: Graded only
Intermediate-level training in the ophthalmic health field. Includes keratometry, topography, refractometry, retinoscopy, slit lamp examination, tonometry, visual field testing, ultra-sound A-Scan measurements, intraocular implant calculations and ultra-sound B-Scan examination. Course content aligns with national certification standards for Certified Ophthalmic Technician (COT) as set forth by the Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO).

R OT 97   Optical Technology Topics   (.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: Graded only; may be taken 4 times
Topics in Optical Technology. See Class Schedule for specific topic offered. Course title will designate subject covered.

Upholstery (R UP)

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAM OF STUDY

Automotive Upholstery

Prepares students for employment in a variety of specialized areas of upholstery including automobiles, trucks, recreational vehicles and watercraft. Students will master skills and techniques specific to each area of interest.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R UP 85	Basic Upholstery	4
R UP/R AT 90	Automotive Upholstery	4
TOTAL UNITS		**8**

Upholstery

Prepares students for variety of positions in upholstery and related industries. Students will master skills and techniques required for furniture upholstery and accessories, antique restoration, custom draperies and window treatments.

In order to earn a certificate, students must achieve a minimum grade of 'C' in each of the certificate program courses.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
R UP 85	Basic Upholstery	4
R UP 86	Advanced Upholstery	4
R UP 88	Antique Furniture Restoration	3
R UP 95	Window Treatments	1.5
R UP 96	Decorator Accessories	1.5
TOTAL UNITS		**14**

COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

R UP 75   Introduction to Upholstery   (2)
4 hours lecture/laboratory
Note: Graded only
Introduction to upholstery skills and techniques. Includes fabric selection, measurement, layout and other considerations. Students will complete an individual project (chair) using commercial sewing machines, cushion stuffer, pneumatic and hand tools. Cost estimating and other functions essential to a successful business venture will be discussed.

R UP 85   Basic Upholstery   (4)
8 hours lecture/laboratory
Note: Graded only; may be taken 2 times
Upholstering or replacing existing upholstery for various types of furniture. Commercial sewing machines, cushion stuffer, pneumatic tools, and hand tools will be used to complete individual projects.

R UP 86   Advanced Upholstery   (4)
8 hours lecture/laboratory
Recommended preparation: R UP 85
Note: Graded only; may be taken 2 times
Advanced upholstery principles and techniques. Power sewing equipment, pneumatic tools, and specialized hand tools will be used to complete complex upholstery projects. Includes estimating, customer relations, tax laws, and other fundamentals of upholstery business operation.

R UP 88   Antique Furniture Restoration   (3)
6 hours lecture/laboratory
Recommended Preparation: A minimum grade of 'C' in R UP 85
Note: May be taken 2 times
Covers basic antique furniture restoration techniques, specialized tools, authentic materials, and standard terminology. Students will learn to identify style, approximate age, original fabrics, and types of exterior woods. Essential business concepts and practices will also be addressed.

R UP 90   Automotive Upholstery   (4)
8 hours lecture/laboratory
Note: Cross listed as R AT 90; graded only; may be taken 2 times
Skills and techniques required to replace, repair or customize automotive and related upholstery. Fabrication of interiors and accessories for automobile interiors, watercraft and other recreational vehicles. Techniques and considerations related to auto alarm or sound system installation. Students will complete individual or group projects.

R UP 95   Window Treatments   (1.5)
3 hours lecture/laboratory
Note: Graded only
Design and fabrication of various window treatments. Includes industry standards, design and fabric options, measuring and estimating, and related business concepts. Students will complete sample projects.

R UP 96   **Decorator Accessories**   **(1.5)**
3 hours lecture/laboratory
Note: Graded only
Skills and techniques necessary for creation of a variety of decorator accessories: upholstered headboards; designer cushions; custom pillows; lampshades; duvet covers, bedspreads and dust ruffles; table runners and covers; and simple slip-covers. Includes design and fabric/materials selection, industry standards, cost estimating/pricing and other business considerations. Students will complete individual projects.

R UP 97   **Upholstery Topics**   **(.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: Graded only; may be taken 4 times
Topics in upholstery. See Class Schedule for specific topic offered. Course title will designate subject covered.

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.