

- OEDA 115. Dental Radiology 3 cr. (2+3P)  
Radiation physics, hygiene, and safety theories. Emphasis on the fundamentals of oral radiographic techniques and interpretation of radiographs. Includes exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria, and other ancillary radiographic techniques. Prerequisites: ENGL 111, OECS 101 or OECS 105 or CS 110, PSY 201 or SOC 101, COMM 253 or COMM 265 or OEHO 101, HNFS 163 or OEHO 225. Corequisites: OEDA 111, OEDA 113, OEDA 117.
- OEDA 117. Dental Materials 3 cr. (2+3P)  
Composition, chemical and physical properties, manipulation and uses of dental materials. Laboratory experiences include the application and manipulation of various materials used in dentistry. Prerequisites: ENGL 111, OECS 101 or OECS 105 or CS 110, PSY 201 or SOC 101, COMM 253 or COMM 265 or OEHO 101, HNFS 163 or OEHO 225. Corequisite: OEDA 111, OEDA 113, and OEDA 115.
- OEDA 121. Dental Assisting II 4 cr. (2+6P)  
Continuation of chairside assisting skill techniques with a major emphasis on four-handed dentistry performance procedures in the specialties of dentistry and expanded chairside functions. Prerequisites: OEDA 111, OEDA 113, OEDA 115, OEDA 117. Corequisites: OEDA 123, OEDA 125, OEDA 127, OEDA 129.
- OEDA 123. Dental Assisting Practicum 6 cr. (1+15P)  
This course is the clinical component of the program that combines general practice and experiences in the work place. Seminar topics focus on the practicum experiences and critique of performance. Prerequisites: OEDA 111, OEDA 113, OEDA 115, and OEDA 117. Corequisites: OEDA 121, OEDA 125, OEDA 127, OEDA 129.
- OEDA 125. Professional Concepts 3 cr.  
Emphasis on the development of professionalism for the dental office. Includes oral communication, psychology, patient relations, problem-solving skills, stress management, and employability in addition to dental jurisprudence and ethics. Prerequisites: OEDA 111, OEDA 113, OEDA 115, and OEDA 117. Corequisites: OEDA 121, OEDA 123, OEDA 127, OEDA 129.
- OEDA 127. Dental Office Management 2 cr.  
This capstone course is an introduction to business office procedures, including telephone management, appointment control, accounts payable, completion of third party reimbursement forms, inventory control data entry for charges and payments, management recall, basic dental computer software and operating basic business equipment. Prerequisites: OEDA 111, OEDA 113, OEDA 115, and OEDA 117. Corequisites: OEDA 121, OEDA 123, OEDA 127, OEDA 129.
- OEDA 129. Preventive Dentistry 2 cr.  
Prevention of dental diseases, oral hygiene instruction, fluoride, community dental health, and nutrition. Development, implementation and evaluation of a community dental health project. Prerequisites: OEDA 111, OEDA 113, OEDA 115, and OEDA 117. Corequisites: OEDA 121, OEDA 123, OEDA 125, OEDA 127.
- OEDA 131. Dental Office Management I 3 cr.  
Introduction to the field of dental office management with emphasis placed on professional verbal and written communication skills utilized within the dental office. Content includes dental terminology, charting, and back office experience as they relate to dental reception and management. Prerequisites: BOT 101, ENGL 111, OECS 105, or CS 101. Corequisites: OECA 133 and OEDA 101.
- OEDA 133. Dental Office Management II 3 cr.  
Places emphasis on computer programs specifically designed for dental office management (Dentrix, Sof Dent, etc.) Expanded course content on oral communication and telephone skills, appointment scheduling, patient relations, stress management solutions, and comprehensive critical thinking/problem solving skills. Prerequisites: BOT 101, ENGL 111, OECS 105, or CS 101. Corequisites: OECA 133 and OEDA 101.
- OEDA 155. Special Topics 1-6 cr.  
Specific subjects to be announced in the *Schedule of Classes*. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- OEDA 156. Independent Study 1-6 cr.  
Individual studies/research on topics related to dental assisting. Prerequisite: consent of instructor. May be repeated for a maximum of 8 credits.
- OEDG 100. Construction Principles and Blueprint Reading 4 cr. (2P)  
Introduction to construction materials, methods, and basic cost estimating and blueprint reading applicable in today's residential, commercial, and public works industry. Instruction by blueprint reading and interpretation, field trips, and actual job-site visits and progress evaluation. Same as OEBT 110, OEPB 110.
- OEDG 101. Introduction to Drafting and Digital Graphics 1 cr.  
Introduction to the Drafting and Design Technologies and Digital Graphics Technology programs. New students are assigned an advisor, introduce to professional organizations associated with the department, and become familiar with degree requirements and specific skills and work habits required for success in the programs.
- OEDG 105. Technical Drawing for Industry 3 cr. (2+2P)  
Technical sketching, basic CAD, and interpretation of drawings with visualization, speed and accuracy highly emphasized. Areas of focus include various trades such as machine part, welding, heating and cooling, and general building sketches/plan interpretation.
- OEDG 108. Drafting Concepts/Descriptive Geometry 2 cr. (1+2P)  
Basic manual drafting skills, sketching, terminology and visualization. Graphical solutions utilizing applied concepts of space, planar, linear and point analyses. Metric and S.I. units introduced.
- OEDG 109. Computer Drafting Fundamentals 3 cr. (2+2P)  
Introduction to computer-aided drafting. Principles and fundamentals of drafting using the latest version of AutoCAD software. Same as C E 109, E T 109, SUR 109.
- OEDG 110. Introduction to Drafting 6 cr. (4+4P)  
Fundamentals of manual and computer-aided drafting.
- OEDG 112. Drafting Concepts/Computer Drafting Fundamentals I 4 cr. (2+4P)  
Basic drafting skills, terminology, and visualization. Introduction to principles and fundamentals of computer-aided drafting. Prerequisites: OECS 207, OECS 125 or consent of instructor. Same as E T 106.
- OEDG 113. Drafting Concepts/Computer Drafting Fundamentals II 4 cr. (2+4P)  
Drafting for mechanical/industrial applications; machine part detailing, assemblies in orthographic, isometric, auxiliary, oblique, and sectional views. Two-dimensional AutoCAD with introduction to 3-D AutoCAD. Prerequisite: OEDG 112. Same as E T 216. Carlsbad branch campus only.
- OEDG 114. Mechanical/Industrial Drafting I 3 cr. (2+2P)  
Drafting for mechanical/industrial applications: machine part detailing, assemblies in orthographic, isometric, auxiliary, oblique and sectional views. Field measurement, measuring tools, geometric dimensioning and tolerancing and metric practice. Introduction to the manufacturing/assembly process. Two-dimensional AutoCAD used with introduction to 3-D AutoCAD. Prerequisite: OEDG 108 and OEDG 109.
- OEDG 118. Geometry for Drafting 3 cr.  
Analysis and problem solving of related technical problems using measuring instruments and techniques with geometry and trigonometry. Prerequisite: CCDM 103N or CCDM 104N.
- OEDG 120. Construction Drafting I 4 cr. (2+4P)  
Basic residential drafting including floor planes, sections, exterior and interior elevations and details, site plans, and roof framing. Residential building and zoning codes, construction materials/ methods, and disability design. Drawing and sheet layout. Prerequisites: OEDG 108 and OEDG 109. Corequisite: OEDG 100.
- OEDG 130. General Building Codes 3 cr. (2+2P)  
Interpretation of the Building Code, local zoning codes, A.D.A. standards and the Model Energy Code to study construction and design requirements and perform basic plan checking. Prerequisite: OEDG 100.
- OEDG 135. Electronics Drafting I 3 cr. (2+2P)  
Drafting as it relates to device symbols; wiring, cabling, harness diagrams and assembly drawings; integrated circuits and printed circuit boards; schematic, flow and logic diagrams; industrial controls and electric power fields. Drawings produced using various CAD software packages. Prerequisites: OEDG 108 and OEDG 109.
- OEDG 142. Surveying Fundamentals 3 cr. (2+2P)  
Elementary surveying and civil drafting theory and techniques for nonengineering majors. Includes traverse plotting, site plans, mapping, cross sections, and development of plan and profile drawings. Actual basic field measurement/surveying as well as extensive manual and CAD projects will be assigned. Prerequisites: OEDG 108, OEDG 109, and OEDG 118.

• **OEDG—Occupational Education, Drafting and Graphics Technology**

*The following courses are offered at the branch campuses only.*

- OEDG 143. Civil/Survey Drafting I 3 cr. (2+2P)  
Introduction to drafting in the field of surveying and civil engineering. Drawings, projects, and terminologies related to topographic surveys/mapping, contour drawings, plan and profiles, improvement plats and street/highway layout. Prerequisite: OEDG 109, OEDG 118 and OEDG 142 for majors. Same as ET 143 and SUR 143.
- OEDG 160. Construction Take-Offs and Estimating 3 cr. (2+2P)  
Computing and compiling materials and labor estimates from working drawings using various techniques common in general building construction and in accordance with standard specifications and estimating formats. Use of spreadsheets and estimating software introduced. Prerequisite: OEDG 100.
- OEDG 176. Computer Drafting in 3-D 3 cr. (2+2P)  
Computer drafting in three dimensions including wire frame, surface modeling, and solids modeling. Computer generated rendering with surface material applications and ray traced shadows will be introduced. Prerequisites: OEDG 108 and OEDG 109.
- OEDG 190. Finding and Maintaining Employment 2 cr.  
Techniques in self-evaluations, resume writing, application completion, job interviewing, and job retention. Exposure to work ethics, employee attitudes, and employer expectations.
- OEDG 214. Mechanical/Industrial Drafting II 3 cr. (2+2P)  
Continuation of OEDG 114. More in-depth, complete and comprehensive working drawings as well as extensive practice with various 3-D, solid-modeling and rendering software applications. Prerequisite: OEDG 114.
- OEDG 218. Mathematics for Civil/Surveying 3 cr.  
Practical problem solving in areas related to civil and surveying fields, including earthwork calculation, heavy construction material take-offs, and surveying data interpretation. Prerequisite: OEDG 118.
- OEDG 220. Construction Drafting II 4 cr. (2+4P)  
Design/drafting of single and multiple residential dwellings and drafting of small commercial buildings. Covers types of construction, building codes, and detailed working and presentation drawings. Extensive use of freehand sketching. Prerequisite: OEDG 109. Corequisite: OEDG 120.
- OEDG 230. Building Systems Drafting 3 cr. (2+2P)  
Development of drawings for electrical, plumbing, and HVAC systems, for residential and commercial building. Use of related CAD software. Prerequisite: OEDG 120.
- OEDG 235. Electronics Drafting II 3 cr. (2+2P)  
Continuation of OEDG 135. Expansion techniques in electronic drafting as it applies to schematic capture, logic diagrams, electronic equipment racks, and printed circuit board documentation. Basic logic simulation, 3-D electronic assemblies and artwork generation for PCB fabrication using various software packages. Prerequisite: OEDG 135.
- OEDG 240. Structural Systems Drafting 4 cr. (2+4P)  
Study of foundations, wall systems, floor systems and roof systems in residential, commercial and industrial design/construction. Produce structural drawings including foundation plans, wall and building sections, floor and roof framing plans, shop drawings and details; schedules, materials lists and specifications. Use of various software. Prerequisite: OEDG 120.
- OEDG 242. Civil/Survey Drafting II 3 cr. (2+2P)  
Instruction in the technology and drafting of state plane coordinates, route surveying, construction staking, points files, contours, grading plans, and cut and fill calculations. Extensive use of various CAD software. Prerequisites: OEDG 142 and OEDG 143.
- OEDG 243. Civil/Survey Drafting III 3 cr. (2+2P)  
Using local zoning, development and utility standards for new subdivisions, students create complete construction plans for subdivisions including roadway/lot layout, drainage and utility systems, grading plans, contour plans and plan/profile sheets. Extensive use of related CAD software. Extensive code research required. Prerequisite: OEDG 142 and OEDG 143.
- OEDG 252. Global Positioning Systems Technology 3 cr. (2+2P)  
Combination of hands-on and theoretical approach in the introduction to navigation and positioning using observations/data collected using Global Positioning System (GPS), general map use and analysis. Instruction may include traditional classroom/lab setting and/or cooperative field experience. Prerequisite: OEDG 142.
- OEDG 253. Geographical Information Systems Technology 3 cr. (2+2P)  
Introduction to Geographical Information Systems (GIS) and related data collecting and mapping techniques. National standards emphasized utilizing computer and Web-based systems and peripherals. Prerequisite: OEDG 109.
- OEDG 255. Independent Study 1-3 cr.  
Instructor-approved projects in drafting or related topics specific to the student's individual areas of interest and relevant to the drafting and graphics technology curriculum. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- OEDG 270. Architectural Sketching and Rendering 3 cr. (2+2P)  
Use of freehand sketching, shading and shadowing techniques, 3-D models, and 1-point and 2-point perspectives in the development of architectural presentation drawings. Prerequisite: OEDG 108.
- OEDG 276. Computer Rendering and Animation I 3 cr. (2+2P)  
Instruction in development of 3-D animated graphics as used by architects for walk-throughs and fly-arounds; used by designers for simulation, by lawyers for accident reconstruction, by executives for presentations, and for training videos in all types of businesses. Extensive use of 3-D Studio and Animator Pro software. Rendering and animation using 3-D Studio. Prerequisites: OEDG 109.
- OEDG 277. Computer Rendering and Animation II 3 cr. (2+2P)  
Continuation of OEDG 276. Covers advanced modeling and animation techniques using 3-D animation software. Prerequisite: OEDG 276.
- OEDG 278. Advanced CAD Applications 3 cr. (2+2P)  
Advanced CAD application and techniques including architectural, graphics, civil/survey and mechanical fields. Exploration of presentation methods. Prerequisite: OEDG 109.
- OEDG 288. Portfolio Development 4 cr. (2+4P)  
Production of a portfolio of working drawings and related documents to include presentation drawing, material take-offs, cost estimate, specifications, and other. Portfolio individualized to the student's degree option and contract with the instructor, and produced using drafting, work processing, spreadsheet and presentation software. Job search activities will also be required. Prerequisite: consent of instructor. Restricted to majors.
- OEDG 290. Special Topics 1-4 cr.  
Topics subtitled in the *Schedule of Classes*. May be repeated for a maximum of 12 credits. Restricted to majors.
- OEDG 291. Cooperative Experience 1-6 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Student meets with advisor weekly. Prerequisite: consent of instructor. Graded S/U.
- OEDG 295. Professional Development and Leadership—DAGA 1-3 cr.  
As members and/or officers of student professional organizations, drafting and graphics students gain experience in leadership, team building, and community services. May be repeated for a maximum of 6 credits.
- **OEDS—Occupational Education, Diagnostic Medical Sonography**  
*The following courses are offered at the branch campuses only.*
- OEDS 101. Introduction to Sonography 2 cr.  
Introduction to the principles of ultrasound, terminology, scanning planes and applications of ultrasound. Includes observation in an ultrasound facility. Prerequisite: Admission to the OEDS or vascular technology program and consent of instructor. Corequisite: OEHO 154, OEHO 202, OEHO 253, MATH 185. Restricted to OEDS and OEV T majors.
- OEDS 110. Ultrasound Physics and Instrumentation 3 cr.  
Properties of sound and its use in diagnostic imaging, technical components involved in ultrasound imaging, how to use ultrasound equipment during lab sessions, the bioeffects of high-frequency sound, and artifacts created during imaging. Prerequisite: MATH 185. Corequisites: OEDS 112, OEDS 114, OEDS 116, and OEDS 118. Restricted to OEDS and OEV T majors.
- OEDS 112. Abdominal Sonography I 4 cr. (3+2P)  
Includes anatomy, physiology, and pathology of the abdominal organ systems; scanning techniques, ultrasound appearance of normal structures, and changes seen with pathologic conditions. Prerequisites: admission to the DMS or vascular technology program and consent of instructor. Corequisites: OEDS 110, OEDS 114, OEDS 115, OEDS 116, and OEDS 118. Restricted to majors.