

SAN DIEGO COMMUNITY COLLEGE DISTRICT  
CONTINUING EDUCATION  
COURSE OUTLINE

**SECTION I**

**SUBJECT AREA AND COURSE NUMBER**

ARTC 517

**COURSE TITLE**

ELECTRONIC PREPRESS OPERATIONS

**TYPE OF COURSE**

NON-FEE

VOCATIONAL

**CATALOG COURSE DESCRIPTION**

An open entry/open-exit modular course preparing individuals for entry-level employment in the graphics industry as electronic prepress technician, scanner operator, platemaker/CTP, proofer, or bindery operator, with supportive skills in related printing operations. Students work in a real-world environment. Safety procedures, stocks and materials, bidding and estimating, work orders, preparing digital files using industry-standard software and hardware, layout, platemaking/CTP, and use of bindery equipment are all part of the course. Students prepare a portfolio of completed assignments. (FT)

**LECTURE HOURS**

220

**LABORATORY HOURS**

500

**ADVISORIES**

NONE

**RECOMMENDED SKILL LEVEL**

Sixth grade reading level, sixth grade general math level and ability to communicate effectively in the English language.

**INSTITUTIONAL STUDENT LEARNING OUTCOMES**

1. Social Responsibility  
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication  
SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking  
SDCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development  
SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

COURSE GOALS

To provide instruction in the operational theory of and production for the graphics industry, to develop problem-solving techniques in order to diagnose various production problems, to enhance the student's reading, writing, math and computation skills so that they may interact successfully with employers and customers, to provide work experience in a simulated work environment representative of those encountered in the graphics industry businesses of today. This experience will include instruction in common business practices, ethics, and integrity. Students who successfully complete the course will be qualified for entry-level positions in the graphics industry.

COURSE OBJECTIVES

Students will demonstrate through practical applications, written and oral communication skills their ability to:

1. Apply safety standards to operate computer and related output devices, printing equipment, bindery equipment and pass a shop safety test with a score of 100%.
2. Demonstrate basic knowledge of the printing field by knowing significant events in the history of printing, filling out a job ticket, naming the pieces of printing equipment in our shop and their purposes, filling out an employment application, knowing the important points of the copyright law and printers trade customs, and visiting printing/bindery shops or a printing trade show.
3. Demonstrate ability to prepare materials for the production of single/multiple color, and process color, including the preparation of digital files and copy, the setup and adjustment of halftones and screen tints, simple design, the principles of typography, the use of clip art, proof reading, planning for the use of color, scaling reduction and enlargements, and the use of the printer's line gauge.
4. Demonstrate proper use of computer components, disks, printers and scanners for the creation of electronic files, learning the use of QuarkXPress, InDesign, PageMaker, Photoshop, Illustrator, and the basics of Microsoft Word.
5. Demonstrate competence in mixing and disposal of processing chemicals and their use for processing film and vinyl plates; set up and operate the imagesetter to produce film for assembly; use of the contact vacuum frame.
6. Operate imagesetter with Harlequin RIP to produce polyester plates, with an introduction to CTP metal plate system with workflow.

COURSE OBJECTIVES (CONTINUED)

7. Demonstrate competence in the ability to strip and plate one and two color jobs and process color jobs, use masking/stripping tools, the exposure, development and preservation of plates, operate and set-up a vacuum frame, light source, and integrator, handle and opaque negatives, and demonstrate methods of step and repeat and multiple burned plates.
8. Demonstrate understanding of the fundamentals of offset lithography, including the operation of presses and the different types of plates and inks. Demonstrate the ability to handle, store, and cut various sizes and types of paper, determine stock calculation and paper pricing.
9. Basic understanding of operation of post-press equipment including power paper cutter, power folder, paper drill, stitcher, and bookletmaker with collating towers.

**SECTION II**

COURSE CONTENT AND SCOPE

UNIT I OPERATING PROCEDURES AND SAFETY

Math review for this unit will cover the following areas: addition, subtraction, multiplication and division of whole numbers, fractions and decimals

MODULE I 60 Hrs

PROCEDURES AND SAFETY

1. Graphic Arts Procedures (20 Hrs)
  - 1.1. Demonstrate use and meaning of job tickets
  - 1.2. Bidding and estimating job cost using a chart system and software
  - 1.3. Use general graphic arts procedures
  - 1.4. Demonstrate understanding of job workflow
  - 1.5. Demonstrate understanding of the various parts of a job.
  - 1.6. Name the pieces of printing equipment in our shop and their purposes
2. Lab Safety - Safety Plan (20 Hrs)
  - 2.1. Be able to apply general shop safety
  - 2.2. 100% correct completion of lab safety exam
  - 2.3. Develop an understanding of the use, storage and removal of hazardous waste
  - 2.4. Identify and correctly state the components of material safety data sheets
  - 2.5. Identify and correctly state the components of safety charts
  - 2.6. Demonstrate the appropriate use of waste ink and flammable liquid storage containers
3. Graphic Arts Industry Knowledge (20 Hrs)
  - 3.1. Show the use of common printing term abbreviations
  - 3.2. State the important points of the copyright law and printers trade customs
  - 3.3. Tour printing, bindery shops, prepress service bureaus and printing trade show
  - 3.4. Identify the significant events in the history of printing

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## COURSE CONTENT AND SCOPE (CONTINUED)

3.5. Fill out an employment application

### UNIT II PREPRESS OPERATIONS

Math review for this unit will cover the following areas: addition, subtraction, multiplication and division of whole numbers, fractions and decimals

#### MODULE II

30 Hrs

#### PREPRESS OPERATIONS

- 1. Layout Tools and Light Table (10 Hrs)
  - 1.1. Layout for stripping
    - 1.1.1. Single
    - 1.1.2. Multiple
    - 1.1.3. Work and turn
    - 1.1.4. Work and tumble
    - 1.1.5. Step and repeat jobs
  - 1.2. Use of light table
  - 1.3. Demonstrate care and cleaning of light tables
- 2. Layout and Design (20 Hrs)
  - 2.1. Describe and explain the use, care and maintenance of
    - 2.1.1. Registration marks
    - 2.1.2. Registration guides
    - 2.1.3. Overlays
    - 2.1.4. Line drawings
    - 2.1.5. Continuous tones
    - 2.1.6. Halftones
    - 2.1.7. Screen tints
    - 2.1.8. Rubylith
    - 2.1.9. Line screen
    - 2.1.10. Blue lines
    - 2.1.11. Computer generated type
    - 2.1.12. Headlines
    - 2.1.13. Gutters
    - 2.1.14. Bleeding
    - 2.1.15. Interior margins
    - 2.1.16. Body copy
    - 2.1.17. Measuring units
      - 2.1.17.1. Points-picas-leaders
      - 2.1.17.2. Ruler-spacing-quading

### UNIT III COMPUTER LAYOUT, DESIGN AND MANAGEMENT

Math review for this unit will cover the following areas: addition, subtraction, multiplication and division of whole numbers, fractions and decimals, measurement in points and picas, leading and sizing

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## COURSE CONTENT AND SCOPE (CONTINUED)

### MODULE III

5 Hrs

#### COMPUTER LITERACY

1. Identify the Parts of the Computer System
2. Demonstrate Cleaning and Care of Computer Components
3. Identify the Windows and Folders for Computer Programs
4. Demonstrate Opening, Usage and Closing of Computer Programs
5. Be Able to Load Paper and Envelopes in Laser Printer
6. Format, Label, and Save Files
7. Print Documents
8. Explain Safety Guidelines for Use of the Computer System and Monitor
9. Explain and Demonstrate Access to the Local Ethernet Network
10. Explain and Demonstrate Access to the Internet

### MODULE IV

10 Hrs

#### INTRODUCTION AND BASICS OF A WORD PROCESSING PROGRAM (Currently Microsoft Word) AND RELATED TASKS

1. Retrieve Text From a Microsoft Word Document for Use in a Document Layout Program
2. Identify and Correctly Use Drop Down Menu Tools in Microsoft Word

### MODULE V

270 Hrs

#### INTRODUCTION AND BASICS OF A DESKTOP PUBLISHING DOCUMENT LAYOUT PROGRAM (Currently QuarkXPress, InDesign and PageMaker) AND RELATED TASKS

1. Develop Letterheads, Envelopes, Business Cards, Wedding Invitations, Fliers Business Forms and Promotional Brochure Using QuarkXPress, InDesign and PageMaker
2. Explain the Differences Among Laser Printers, Inkjet Printers, and Imagesetters
3. Install and Uninstall Programs
4. Copy Files
5. Develop a 2-Sided 4-Color Promotional Brochure Using a Document Layout Program and Design Programs
6. Explain and Demonstrate the Use of Networked Printers

### MODULE VI

180 Hrs

#### INTRODUCTION AND BASICS OF DESIGN PROGRAMS (Currently Illustrator and Photoshop) AND RELATED TASKS

1. Develop Assigned Designs in Illustrator and Complete Tutorial Package
2. Manipulate and Change Images in Photoshop and Complete Tutorial Package
3. Explain the Difference Between Raster and Vector Images
4. Explain the Meaning of Resolution as Applied to Image Files

COURSE CONTENT AND SCOPE (CONTINUED)

5. Complete the Assigned Final Projects for Photoshop and Illustrator

MODULE VII

25 Hrs

IMAGING SYSTEM HARDWARE & SOFTWARE

1. Setup and Calibration of Imagesetters Using Hardware and Software
  - 1.1. Demonstrate proper procedures for activation of hardware and software
  - 1.2. Demonstrate proper loading of various materials to be imaged
  - 1.3. Demonstrate proper use of toolbox software for loading profiles into imagesetter
  - 1.4. Calibration of material using a densitometer for density and screen value
  - 1.5. Saving profiles and preparing imagesetter for output
2. Job Workflow
  - 2.1. Prepare files for output using appropriate document layout program
  - 2.2. Copy/move prepared file to removable media or network
  - 2.3. Follow appropriate procedures for setup of imagesetter and processor
  - 2.4. Activate all needed software applications/rip and prepare document for output
  - 2.5. Run color-separated proofs to ensure proper separation
  - 2.6. Demonstrate the proper procedures for creating postscript file for imagesetter
3. Demonstrate Sending Postscript File to Imagesetter and Understanding the Ripping Process in the Observation Window While the Job is Being Processed
4. Demonstrate Proper Media Handling and Transport Procedures

MODULE VIII

20 Hrs

COMPUTER-TO-PLATE (CTP) IMAGING SYSTEM HARDWARE & SOFTWARE

1. Setup and Calibration of CTP Imagesetter Using Hardware and Software (8 Hrs)
  - 1.1. Demonstrate proper procedures for activation of hardware and software
  - 1.2. Demonstrate proper loading of vinyl plate material
  - 1.3. Run test calibration sheet for vinyl plate material to confirm proper image quality
  - 1.4. Demonstrate proper calibration procedures as required
2. Job Workflow (12 Hrs)
  - 2.1. Follow appropriate procedures for setup of imagesetter and processor
  - 2.2. Copy/move prepared file to removable media or network
  - 2.3. Activate all needed software applications/rip and prepare document for output
  - 2.4. Prepare files for output using appropriate document layout software (for proper plate size and position for press)
  - 2.5. Run color-separated proofs to laser printer ensure correct color separation
  - 2.6. Demonstrate the proper procedures for creating postscript file for imagesetter
  - 2.7. Demonstrate sending postscript file to imagesetter and understanding the ripping process in the observation window while the job is being processed
  - 2.8. Demonstrate proper media handling and transport procedures

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## COURSE CONTENT AND SCOPE (CONTINUED)

### UNIT IV PHOTOGRAPHIC IMAGING AND PROCESSING

MODULE IX 30 Hrs

#### PHOTOGRAPHIC IMAGING AND PROCESSING

1. Processing Room Procedures (10 Hrs)
  - 1.1. Demonstrate proper care, use, and storage of film
  - 1.2. Demonstrate proper care, use, and storage of camera ready copy
  - 1.3. Be able to use the reduction wheel properly for sizing purposes
  - 1.4. Explain the safety guidelines for the use of the processing room facilities
  - 1.5. Processor use, care and maintenance
    - 1.5.1. Matchprint processor with laminator
    - 1.5.2. Film processor
    - 1.5.3. Polyester plate processor
    - 1.5.4. Silvermaster with processor
    - 1.5.5. Mixing photographic chemicals
2. Flatbed Scanner Operation (20 Hrs)
  - 2.1. Maintenance and care of scanner
  - 2.2. Demonstrate proper scanning techniques for line art
  - 2.3. Demonstrate proper scanning techniques for photographs
  - 2.4. The use of Photoshop to properly adjust color and grayscale images in preparation for printing

### UNIT V MASKING AND PLATE MAKING SKILLS

Math review for this unit will cover the following areas: addition, subtraction, multiplication and division of whole numbers, fractions and decimals, volume measures, ratios

MODULE X MASKING AND PLATE MAKING SKILLS 20 Hrs

#### FILM ASSEMBLY AND PLATE MAKING

1. Film Assembly Procedures (17 Hrs)
  - 1.1. Demonstrate use and care of light table tools
  - 1.2. Layout masking sheet
  - 1.3. Make dummy copies
  - 1.4. Place film negative onto masks
  - 1.5. Cut windows in masking sheets
  - 1.6. Opaque film as needed
  - 1.7. Use of registration tabs on masking sheet
  - 1.8. Use registration guide pins
  - 1.9. Use registration system for multi-color work
2. Plates and Platemaking Procedures (3 Hrs)
  - 2.1. Explain the safety guidelines for this machine
  - 2.2. Be able to identify all parts of platemaker

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## COURSE CONTENT AND SCOPE (CONTINUED)

- 2.3. Change light source in platemaker
- 2.4. Use vacuum in platemaking
- 2.5. Use integrators with photo cell in platemaking
- 2.6. Demonstrate proper setup procedures when burning a plate
- 2.7. Identify different types of plates and their use
- 2.8. Developing and gumming plates manually
- 2.9. Developing and gumming plates using a plate processor
- 2.10. Identify all parts of plate processor
- 2.11. Maintenance procedures for plate processor

## UNIT VI PRESS ROOM PROCEDURES & PRESS OPERATIONS

Math review for this unit will cover the following areas: addition, subtraction, multiplication and division of whole numbers, fractions and decimals, volume measures, percentages, ratios, weights and mass

MODULE XI 8 Hrs

### PRESS OPERATIONS

- 1. Press Room Procedures (3 Hrs)
  - 1.1. Understand use of a scheduling board
  - 1.2. Demonstrate the storage of stock
- 2. Press Room Safety (3 Hrs)
  - 2.1. Use safety around pressroom equipment
  - 2.2. Use safety with chemicals used on presses
  - 2.3. Demonstrate general safety
  - 2.4. Know and properly use the flammable liquids storage cabinet
- 3. Understand Basic Operation of a Printing Press (2 Hrs)

## UNIT VII POST PRESS OPERATIONS

Math review for this unit will cover the following areas: addition, subtraction, multiplication and division of whole numbers, fractions and decimals, volume measures, percentages, ratios, weights and mass

MODULE XII 62 Hrs

### POST PRESS OPERATIONS

- 1. General Bindery Procedures (14 Hrs)
  - 1.1. Schedule jobs
  - 1.2. Order stock
  - 1.3. Wrap jobs
  - 1.4. Label jobs
  - 1.5. Ship jobs



COURSE CONTENT AND SCOPE (CONTINUED)

- 1.6. Pad jobs
  - 1.6.1. Regular
  - 1.6.2. NCR - special
- 1.7. Stock calculation, handling, storage and cutting
- 1.8. Paper categories, weights, sizes, grains, packaging and pricing
- 2. Bookletmaker with Collating Towers Operations (30 Hrs)
  - 2.1. Identification and setup
    - 2.1.1. Explain safety guidelines for machine
    - 2.1.2. Identify parts of machines
    - 2.1.3. Clean and care for machines
    - 2.1.4. Demonstrate basic understanding of setup of collating towers
    - 2.1.5. Demonstrate basic understanding of setup of bookletmaker
    - 2.1.6. Demonstrate basic understanding of setup of booklet face trimmer
    - 2.1.7. Demonstrate trouble shooting
  - 2.2. Machine operation
    - 2.2.1. Set up and run production collation using towers, with no stitch
    - 2.2.2. Set up and run production saddlestitch booklet – 2 stitches
    - 2.2.3. Set up and run production flat booklet – 1 corner stitch
- 3. Folder Operation (With Continuous Feed) (8 Hrs)
  - 3.1. Identification and setup
    - 3.1.1. Explain safety guidelines for machine
    - 3.1.2. Identify parts of machine
    - 3.1.3. Clean and care for machine
    - 3.1.4. Setup of continuous feeder
    - 3.1.5. Setup of folding plates for appropriate type of fold (half fold, letter fold, Z-fold, double parallel, gate fold, engineering fold)
    - 3.1.6. Demonstrate trouble-shooting
  - 3.2. Machine operation
    - 3.2.1. Set up and practice folding assignments
    - 3.2.2. Set up and run production for half fold
    - 3.2.3. Set up and run production for letter fold
- 4. Paper Drill Operations (1.5 Hrs)
  - 4.1. Identify parts of machine
  - 4.2. Clean and care for machine
  - 4.3. Change bit size
  - 4.4. Change positions of stops (holes)
  - 4.5. Wax and sharpen bit
  - 4.6. Explain safety guidelines for machine
- 5. Power Stitcher Operations (1.5 Hrs)
  - 5.1. Identify parts of machine
  - 5.2. Clean and care for machine
  - 5.3. Explain safety guidelines for machine
- 6. Power Paper Cutter (7 Hrs)
  - 6.1. Identify parts of cutter
  - 6.2. Clean and care for cutter

COURSE CONTENT AND SCOPE (CONTINUED)

- 6.3. Demonstrate basic understanding of safety procedures when changing blades and cutting sticks on cutter
- 6.4. Figure and cut different paper size and stock
- 6.5. Set up cutter for different cuts
- 6.6. Set up cutter for trimming books
- 6.7. Find grain direction on paper
- 6.8. Explain safety guidelines for machine

APPROPRIATE READINGS

1. *Getting It Printed*, Kenly, Eric and Beach, Mark, Coast to Coast Books, current edition
2. *Adobe Illustrator CS2, Classroom in a Book*, Adobe Systems Inc., current edition
3. *Adobe Photoshop CS2, Classroom in a Book*, Adobe Systems Inc., current edition
4. *Graphic Communications: The Printed Image*, Prust, Z.A., Goodheart-Willcox Co., current edition

WRITING ASSIGNMENTS

Typical writing assignments will include:

1. Completing assigned reports.
2. Providing written answers to assigned questions.
3. Performing arithmetic calculations as assigned.
4. Completing production request orders.

OUTSIDE ASSIGNMENTS

Students are expected to spend a minimum of two hours per day outside of class in practice and preparation for each day in class. Appropriate assignments may include, but not be limited to:

1. Appropriate readings.
2. Preparing research reports.
3. Preparing appropriate writing assignments.
4. Studying as needed to perform successfully in class.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Students will perform analysis and evaluation of reading and/or classroom materials and utilize this analysis in classroom discussions, writing assignments, and in performing laboratory activities. Students must select and use appropriate methods and materials needed to complete laboratory assignments.

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### EVALUATION

A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the trade, as required, to meet the standards of the printing and graphics industry.
2. Apply theory to laboratory assignments.
3. Perform on written, oral, or practical examinations.
4. Contribute to class discussions.
5. Maintain attendance per current district policy.

Satisfactory completion of the course requires completion of a culminating activity, which may include, but is not limited to, one of the following:

1. Written report.
2. Classroom presentation.
3. Research project.
4. Industry involvement.

The culminating activity will require the student to use the new skills that he/she acquired during the course.

The student will receive an evaluation at the end of each module or when requested by student. A grade point average of 2.0 or letter grade of C or better must be achieved for satisfactory completion.

Upon satisfactory completion of all units and a minimum of 696 hours of attendance, a course Certificate of Program Completion will be issued titled: Electronic Prepress.

NOTE: If a student's goal is to complete one or more of the individual units, upon satisfactory completion of that unit(s), a Certificate of Completion may be issued.

### METHOD OF INSTRUCTION

Classroom lectures, demonstrations, laboratory, audio-visual presentations and computer assisted instruction. Large group, small group, and individual instruction. Field trips, job shadowing and internships may be utilized.

### TEXT AND SUPPLIES

Texts:

*Pocket Pal*, International Paper Co., current edition

*Offset Lithographic Technology*, Kenneth F. Hird., current edition

*Offset Lithographic Technology – Workbook* edition, Kenneth F. Hird., current edition

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PREPARED BY: Robert S. Hutchinson Ed. D. DATE: August 20, 1995

REVISED BY: James K. Laramie, Associate Professor DATE: February 18, 2007

REVISED BY: James K. Laramie, Associate Professor DATE: October 23, 2008

REVISED BY: Instructional Services, SLOs added DATE: March 10, 2017

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100  
California Community Colleges, Title 5, Section 55002  
Continuing Education Catalog