SAN DIEGO COMMUNITY COLLEGE DISTRICT
COLLEGE OF CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

CLTX 611

COURSE TITLE

INTRODUCTION TO DIGITAL TEXTILE PRINTING

TYPE COURSE

NON- FEE VOCATIONAL

CATALOG COURSE DESCRIPTION

Digital textile printing is a revolutionary technology that has transformed the sewn products and textiles industry. The Introduction to Digital Textile Printing course provides students with a fundamental understanding of this innovative field, covering key concepts, techniques, and processes essential for entry-level enthusiasts, technicians and designers. Students create and print custom textile designs, from clothing to home decor, using direct to product, dye-sublimation, heat transfer vinyl and other digital printing equipment. (FT)

LECTURE/LABORATORY HOURS

72 - 80

ADVISORIES

NONE

RECOMMENDED SKILL LEVEL

Knowledge of general math and basic computer skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
   SDCCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
   SDCCE students demonstrate effective communication skills.
3. Critical Thinking
   SDCCE students critically process information, make decisions, and solve problems

independently or cooperatively.

4. Personal and Professional Development
   SDCCE 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.
5. Diversity, Equity, Inclusion, Anti-Racism, and Access
   SDCCE students critically and ethically engage with local and global issues using principles of equity, civility, and compassion as they apply their knowledge and skills: exhibiting awareness, appreciation, respect, and advocacy for diverse individuals, groups, and cultures.

COURSE GOALS

1. Gain an understanding of the history, evolution, and significance of digital textile printing in design and production.
2. Explore the basic principles of digital printing, including inkjet technology, color management, and the use of digital design software.
3. Learn how to choose suitable fabrics for digital printing techniques and understand the importance of pre-treatment and post-printing processes such as fabric washing, coating, and finishing.
4. Develop fundamental image design skills to create artwork that is compatible with digital textile printing equipment.
5. Gain experience in preparing design files for digital textile printing.
6. Explore the various types of digital textile printing equipment and understand their applications and capabilities.
7. Learn the step-by-step processes of digital printing on textiles, from pre-press operations to post-printing finishing techniques.
8. Explore the diverse applications of digital textile printing.
9. Gain an understanding of product quality and cost and their importance in sustainable business practices.
10. Discuss the ecological impact of digital textile printing and emerging sustainable practices within the industry.
11. Gain an understanding of the entrepreneurial mindset and its importance in the industry.

COURSE OBJECTIVES

Upon successful completion of the course, students will be able to:

1. Explain the basics of digital textile printing, including a brief history, and the ways it has revolutionized manufacturing industries.
2. Explain the basic principles of digital textile printing technology, including inkjet printing, color management, and the operation of digital printing equipment.
3. Select textiles and products compatible with the digital printing technique being used

and apply the appropriate pre-treatment and post-printing finishing processes for the textile.

4. Create basic graphic images for printing compatible with the specified printer.
5. Prepare basic design files for digital textile printing.
6. Explain the various types of digital textile printing equipment and understand their applications and capabilities.
7. Demonstrate the basic step-by-step processes of printing on textiles, from pre-press operations to post-printing finishing techniques.
8. Compare and identify the diverse applications of digital textile printing, from apparel, accessories, and outdoor gear to interior soft goods and promotional products.
9. Evaluate product quality and cost.
10. Explain and apply ethical and ecologically sustainable digital printing practices.
11. Explain entrepreneurial and soft skills and their application in the industry and workplace.

SECTION II

COURSE CONTENT AND SCOPE

1. Introduction to Digital Textile Printing and the Product & Textile Surface Treatments: Printing Certificate Program
    - 1.1. Clothing and Textiles (CLTX) programs and pathways
        - 1.1.1. San Diego College of Continuing Education (SDCCE) programs and pathways
        - 1.1.2. Credit by exam
    - 1.2. Course learning management system
        - 1.2.1. Canvas
        - 1.2.2. Other supporting software used
2. Essential Entrepreneurial and Soft Skills in the Classroom and Work Environments
    - 2.1. Definition of entrepreneurial and soft skills
    - 2.2. Examples of entrepreneurial and soft skills
        - 2.2.1. Communication skills
        - 2.2.2. Conflict resolution skills
        - 2.2.3. Problem solving
        - 2.2.4. Design thinking
        - 2.2.5. Digital tool skills
3. Overview of Digital Textile Printing
    - 3.1. History
    - 3.2. Digital printing technologies and software in the cut and sew industries
    - 3.3. Significance of digital textile printing in cut and sew industries
4. Digital Printing Technologies and Applications
    - 4.1. Technologies
        - 4.1.1. Direct to product, textiles, or garment printers (DTG)

- 4.1.2. Direct to film printing (DTF)
- 4.1.3. Dye sublimation textile printers
- 4.1.4. Vinyl heat transfer printers and cutters
- 4.1.5. Laser etching and cutting
- 4.1.6. Three-dimensional (3D) printers
- 4.1.7. Other or emerging digital textile printing equipment

4.2. Areas of application

- 4.2.1. Garments
- 4.2.2. Accessories
- 4.2.3. Home goods
- 4.2.4. Outdoor gear
- 4.2.5. Sporting apparel and soft goods
- 4.2.6. Rolls of textiles
- 4.2.7. Promotional goods
- 4.2.8. Other items constructed with textiles

5. Fundamental Processes to Prepare Images for Printing
   - 5.1. Overview of preparing an image for digital printing
     - 5.1.1. File formats used in digital printing
       - 5.1.1.1. Raster images and files
       - 5.1.1.2. Vector Images and files
     - 5.1.2. Resolution
     - 5.1.3. Text
   - 5.2. Graphic image creation with digital textile printing
     - 5.2.1. Basic color theory
     - 5.2.2. Pattern aesthetics
     - 5.2.3. Creating or using original artwork
     - 5.2.4. Using templates
     - 5.2.5. Using photographs
   - 5.3. Software used for digital textile printing technologies
6. Textile and Product Selection and Pre-Processing
   - 6.1. Fiber content
   - 6.2. Textile density
   - 6.3. Textile product’s intended use
7. Digital Printing Processes
   - 7.1. Textile pre-printing treatment processes
     - 7.1.1. Washing
     - 7.1.2. Pressing
     - 7.1.3. Coating
   - 7.2. File importing
   - 7.3. Printing operation
   - 7.4. Printing transfers

- 7.4.1. The heat-press
  - 7.4.1.1. Operation
  - 7.4.1.2. Settings
  - 7.4.1.3. Maintenance
- 7.5. Post-printing curing and finishing processes

8. Quality Control and Production Efficiency
   - 8.1. Principles of quality control in digital printing technologies and techniques
   - 8.2. Image registration
   - 8.3. Inspection, testing and correction techniques
   - 8.4. Sustainable digital printing practices and materials
   - 8.5. Reducing waste
9. Documentation of Skills
   - 9.1. Portfolios
10. Career Options and Job Opportunities
    - 10.1. Payroll employment
    - 10.2. Self-employment
    - 10.3. Freelancing
    - 10.4. Employment resources
      - 10.4.1. Online marketplaces and job posting sites
      - 10.4.2. Social media
      - 10.4.3. Networking

APPROPRIATE READINGS

Reading assignments may include, but are not limited to, subject matter textbooks, workbooks, instructor written handouts, industry-related publications, online help pages, articles posted on the internet, information from web sites, online libraries, resource manuals, videos and tutorials. Topics will be related to digital printing technology and the cut and sew industry.

WRITING ASSIGNMENTS

Appropriate writing assignments may include, but are not limited to:

1. Maintain a portfolio of class notes, technique samples and completed learning project actualizations.
2. Written plan of digital textile printing, where the student explains their chosen project theme and visual inspiration, and the production process is listed.
3. Calculate the cost of a digitally printed textile/product project(s).

OUTSIDE ASSIGNMENTS

Outside assignments may include, but are not limited to:

1. Independent, further exploration of a class topic.
2. Independent research on digital printing developments and new trends in the clothing and textile industry.
3. Practical application of digital printing skills on textile products outside of class assignments.
4. Practical application of sustainable best practices learned in class.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Assignments that demonstrate critical thinking may include, but are not limited to:

1. Student self-evaluation of the completed digital printing learning projects using designated rubric.
2. Prepare design printing files according to the specifications of the chosen printing technique(s), paying attention to color profiles, resolution, and file formats.
3. Calculate the cost of the finished digitally printed project(s).

EVALUATION

A student's grade will be based on multiple measures of performance related to the course objectives. The assessment will measure development of independent critical thinking skills and the student's ability to perform introductory digital printing skills. Evaluation of the student's ability will be based on, but not limited to, the following criteria:

1. Completion of the digitally printed textile class learning projects.
2. Completion of a class portfolio demonstrating technique samples and showcasing assignments.
3. Completion of class participation requirements.

Upon successful completion of all courses included in the program, a Certificate of Program Completion will be issued.

METHOD OF INSTRUCTION

Methods of instruction may include, but are not limited to:

1. Classroom and streamed lectures
2. Demonstrations
3. Journaling
4. Laboratory
5. Classroom, virtual, or online discussions
6. Web-based resources
7. Work based learning opportunities
8. Job shadowing
9. Field trips

10. Guest speakers
11. Audio-Visual resources
12. Video resources
13. Collaborative learning
14. Individual/small group instruction

This course, or sections of this course, may be offered through distance education.

TEXTS AND SUPPLIES

1. Digital Textile Printing: Science, Technology and Markets, Hua Wang & Hafeezullah Memon, Woodhead Publishing; 1st edition (July 12, 2023)
2. Introduction to Dye Sublimation for Beginners: Dye Sub for Beginners, Malcolm May, Aftermath; 1st edition (August 21, 2019).
3. Artwork for DTG Printing: Art Creation for Direct to Garment Printing. Dan Clement, Great Dane Graphics, 2019.

Supplies:
The student will provide the required printing blanks as listed on the course syllabus, have at least a 32 GB USB flash drive with them for all classes and lab work, and have access to a computer or laptop outside of the campus classroom and lab to complete assignments.

PREPARED BY: Shirley Pierson, MFA DATE November 2023

REVISED BY: _____ DATE: _____

Instructors must meet all requirements stated in Policy 5500 (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 5500
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog