

Department of Graphic Communications
College of Business and Behavioral Science
Clemson University

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Office Hours: (as listed below, or by appointment)
MW..... 11:30-1:30

Class Meeting Times:

Lecture: Sec 001: TTH 9:30–10:20 a.m., Rm 200 Godfrey Hall
Lab: Sec 001: TTH 11:00–1:45 p.m., Rm 200 Godfrey Hall

Course Title: GC 102 Computer Art and CAD Foundations, 4 cr. (2, 6)

Prerequisites: None

Catalog Description:

Graphic Communications industries make extensive use of software and best practices from concept through production. This course provides a solid foundation in drawing, imaging, and layout software; packaging structure and 3D CAD; design principles and problem solving relative to audience, need, typography, color, materials, printing, and end use.

Rationale for the Course:

Students desiring to excel in the diverse disciplines comprising graphic communications must first understand the foundational concepts and industry standards for best practices in order to become effective practitioners, decision-makers and problems-solvers in the areas of design, layout, structure, marketing solutions, and reproduction/distribution. This course provides specific instruction using industry accepted practices in areas including: organizing and navigating through the digital work environment, use of software applications, maintaining brand integrity, understanding and defining color, and designing for success based on customer need, printing system, distribution and end-use. This foundation, put into practice, will increase the effectiveness and reliability of the product/file/campaign to meet the customer need. In addition, students will complete the set up of their web page to link to their ePortfolio and begin to collect the appropriate artifacts.

Learning Outcomes: As evidenced through lecture and lab experiences, and on class examinations, at the completion of the course the students will be able to:

1. Demonstrate the ability to navigate networked computers by successfully setting up connections to access servers and printers, save electronic files, and create folders for content organization evaluated by completing an ePortfolio web page submit projects in hardcopy or in a digital dropbox.
2. Demonstrate a practical understanding of the five basic design principles through the design evaluation in lab activities.
3. Develop an understanding of the importance of business needs in the design process addressing the issues of target audience, brand identity, and solutions selling through the design evaluation in lab activities.
4. Apply design and typography principles to develop graphic designs that communicate specific information, purpose, and emotion evaluated by completing a typography assignment and newsletter lab assignment.
5. Demonstrate a practical understanding of folding and basic binding options as design considerations when working with design planning for lab assignments.

6. Drawing on design and typographic principles, demonstrate the ability to prepare thumbnail sketches and dimensioned rough layouts to effectively communicate design ideas when working with design planning for lab exercises on a typography, newsletter, magazine ad, and graphic package design lab assignments.
7. Demonstrate a basic understanding of resolution-to-output ratio for images originating from the Internet, digital camera, and scanner by matching a resolution to a purpose in each lab assignment dealing with raster images prepared for displaying on a monitor or various print media.
8. Demonstrate a working knowledge of the basic vector drawing tools, page layout concepts, and workflow methods of Adobe Creative Suite Illustrator by completing lab exercises dealing with a logo design, and graphic package design lab assignments.
9. Demonstrate a working knowledge of the basic tools, page layout, and workflow methods of Adobe Creative Suite InDesign software application by completing a one-page newsletter and a single page magazine ad.
10. Demonstrate a working knowledge of the basic tools, and workflow methods of Adobe Creative Suite Photoshop and Bridge software applications by manipulating B&W, grayscale and color images to set reproduction standards established in the newsletter, magazine ad, graphic package design and Photoshop tone control lab assignments and the appropriate techniques to properly organize and store files.
11. Define and demonstrate an understanding of the principles of additive and subtractive color by diagramming them and through a homework assignment.
12. Demonstrate an understanding of the differences between, and uses of, CMYK colors, mixed ink swatches and spot colors by creating and using each in a color identification lab assignment, and choosing appropriate options in other lab assignments. Demonstrate image quality assessment by ranking sample photographs for tonality, composition and sharpness in lab activities.
13. Demonstrate image manipulation by correcting sample photographs using industry accepted practices of capture and adjustment techniques in Adobe Creative Suite Photoshop, using histogram comparisons of before and after adjustment in lab activities.
14. Demonstrate a working knowledge of Adobe Creative Suite Acrobat and Distiller; to create files to be effectively shared over multiple platforms through the proper creation of PDF files in the student's newsletter, magazine ad, graphic package design and Photoshop tone control lab assignments.
15. Integrate pixel images, vector images and text in a page layout when working with typography, the newsletter, magazine ad and Photoshop tone control lab assignments.
16. Employ technical drawing standards (line types, weights, orientation of notes and other graphic information, orthographic projection, dimensioning isometric/oblique interpretations) when dimensioning graphic and package designs while working on a set of CAD exercises in the lab.
17. Demonstrate basic technical print reading skills of exploded machine parts diagrams and simple package structure layouts as a result of the lecture and lab exercised centered around CAD.
18. Demonstrate a working knowledge of the basic tools and workflow methods of CAD software through basic layout of a 3D package.
19. Demonstrate a practical understanding of structural needs for reliable packaging through homework assignment, CAD exercises, and in the layout of the Packaging Design assignments.
20. Integrate a CAD layout with design, proper typographical implementation, and continuous tone images, along with vector elements by using appropriate software applications and workflow methods in a graphic package design lab assignment.
21. Demonstrate personal safety awareness by wearing proper attire and personal protective equipment when working in the lab.
22. Demonstrate the ability to design and post a personal web page to link to your ePortfolio as evidenced by posting and providing viewing access.

Topical Outline:

- A. Navigating the Electronic Environment
 - 1. Accessing Servers and Set-up of Devices Connected Through the Network
 - 2. File Formats, Naming Functions
 - 3. Working with Data Asset Management Software
 - 4. Using Help Options and other learning resources
 - 5. Basic/routine Maintenance for Hardware and Software
- B. The Basics of Graphic Design
 - 1. Design Principles
 - 2. Target Audience
 - 3. Brand Identity
- C. Typographic Principles
 - 1. Font Selection
 - 2. Parts of a Letter
 - 3. Typography Terminology
 - 4. Text Controls
 - 5. Formatting
- D. Idea Conceptualization
 - 1. Brainstorming
 - 2. Using Thumbnails, Sketches, and Rough Layouts
 - 3. Working with Design Requirements to Maximize End-use
- E. Business Marketing in the design process
 - 1. Branding / Brand Identity
 - 2. Logos
 - 3. Psychology of Color
 - 4. Serving as a Solutions Provider for Customer's Needs
- F. Vector Art
 - 1. File Creation
 - 2. Bezier Tools
 - 3. Object Manipulation and Control
 - 4. Tools and Techniques
 - 5. Advantages and Disadvantages compared to Raster (Bitmap) Images
- G. Raster (Bitmap) Art
 - 1. File Creation
 - 2. Mode and Resolution Issues
 - 3. Image Manipulation and Control
 - 4. Tools and Techniques
 - 5. Advantages and Disadvantages compared to Vector Art
- H. Color and Color Theory
 - 1. Additive Color
 - 2. Subtractive Color
 - 3. Color Systems / Models
 - 4. Creating Colors on the Desktop
 - 5. Controlling Color
- I. Digital Photography and Image Enhancement
 - 1. Maximizing Photo Images
 - 2. Analyzing Digital Images
 - 3. Tone and Image Control
 - 4. Understanding Resolution
 - 5. Composition
 - 6. Image adjustment and enhancement for end-use
 - 7. Tools and Techniques
- J. Folding and Binding Options
 - 1. Imposition
 - 2. Terminology
 - 3. Types of Folds

4. Common Binding Options
5. How Folding and Binding Affect Design and Layout
- K. Page layout and workflow incorporation
 1. Document Set-up
 2. Productivity Techniques (master pages, Styles, templates...)
 3. Page Layout Tools and Functions
 4. Determining When and Where to Make Changes
 5. Linking Files
- L. Basics of Package Structure and Design
 1. Packaging Design Aesthetics and Functionality
 2. Structural Elements (fold, score, perf, types of tabs...)
 3. Tools for Design and the Package Design Process
 4. Material Choices and Product Protection
 5. Environmental and Sustainability Considerations
- M. Idea Formalization
 1. Using Standard Lines and Symbols for Geometric Construction
 2. Orthographic Projection
 3. Isometric Drawing
 4. Exploded View Drawings
- N. Communicating using CAD
 1. The Components of a CAD System
 2. Operating Systems and File Formats used with CAD
 3. Commands and Functions Available to Create, Edit, Transform and Visualize Images in CAD
 4. Software Use, Basic CAD Tools to Create Two & Three Dimensional Drawings and Packages
 5. Relationship between CAD and CAM
- O. Designing your webpage to link to your ePortfolio
 1. Using Google Sites
 2. Proper Set-up to meet Gen Ed requirements
 3. Presentation of Elements
- P. General Lab Safety

Laboratory Policies:

Bring your textbook and laptop to every lab. Students are expected to work in lab and are responsible for keeping two backup copies of all electronic files created in the class. Collegial support from other students is encouraged, but each student must create their own files and recognize that sharing files is not only a violation of Academic Integrity, but does not allow for an individual's proper development of the skills outlined in this course.

Proper care should be taken to protect the computer equipment and software to create a successful environment for every student in every section of the class. When working on output plotting equipment, students need to recognize the appropriate safety rules for their own well being and the well being of the equipment.

The lab structure will work with modular training to allow students to move at their own pace.

Textbooks and Software:

Required-

- Botello, Chris and Eisner Reding, Elizabeth. *The Design Collection Revealed: Adobe InDesign CS5, Adobe Photoshop CS5, and Adobe Illustrator CS5*, Delmar, Clifton Park, NY, ©2010.
- Students are required to purchase Adobe Create Suite 5 (Design Premium or Design Standard) for their laptops (available for the PC or Mac)
- Other resource materials will be provided by the instructor throughout the semester.

Course Project Activities:

Typography Exercises	25 points
Raster/Vector Assignment	25 points
Identifying Colors on the Desktop	15 points
Resizing vs Cropping	15 points
Photoshop Tone Control Assignment	40 points
Branding exercise (creating a corporate logo)	40 points
Magazine Ad	50 points
Newsletter	100 points
Package Design I (creating a basic 3D container)	20 points
Package Design II (creating a graphic image to die)	80 points
Data Asset Naming and Organization	10 points
Web page to ePortfolio (Google Sites)	30 points
Total	450 points for Lab Assignment

Evaluation:

Lab:

Class participation and care of lab	25 pts
Projects/Reports	450 pts
Problem Solving Skills	25 pts

Lecture:

Attendance and Class Participation	25 pts
Homework and Quizzes	150 pts
Exam #1	100 pts
Exam #2	100 pts
<u>Final Exam</u>	<u>125 pts</u>
Total	1000 pts

Grades*

900–1000 pts = A**
800–899 pts = B**
700–799 pts = C
600–699 pts = D
Below 600 pts = F

- * Regardless of point total, all Course Projects must be completed to receive a passing grade in the course.
- * Regardless of point total, to receive an “A,” a student must get 75% or above on each exam. To receive a “B,” a student must pass each exam.

XI. Students with Disabilities:

Appropriate accommodations will be made for students with disabilities that are documented by Disabilities Services. It is expected that students will follow the policies and procedures of Disabilities Services (see http://www.clemson.edu/sds/student_guide). Students must present a letter stating that the disability has been documented and requesting the specific accommodations during the first week of classes. Additionally, it is the responsibility of the student to give the professor one-week notice prior to each instance where an accommodation will be needed.

XII. Academic Integrity:

As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a “high seminary of learning”. Fundamental to this vision is a mutual commitment to truthfulness, honor and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. (See *Undergraduate Announcements* for more details.)

XIII. Class Participation and Attendance:

Regular and punctual attendance is required of each student. Laptops are needed for LAB ONLY and will not be allowed in Lecture except at the instructor’s request. The student is responsible for signing in and out of lecture and lab. Students will be allowed two unexcused absence from lecture and two from lab without a loss in points. For each additional unexcused absence, 10 points will be deducted from the student’s course total. Students accumulating more than 6 unexcused absences total may be dropped from the course. Legitimate absences will be excused. If there are any questions as to the nature of an absence, the student should seek out

the instructor prior to the absence. Excessive tardiness is a disruption to the instructor and the class, and will not be tolerated. Problem cases will be handled on an individual basis and will result in a loss of points. Should it become necessary for the instructor to be absent, suitable arrangements will be made in advance. In accordance with the Faculty Manual, if no advance arrangements are made, students are authorized to leave after a fifteen-minute wait.

The last day to drop a class or withdraw from the course:

- without record is **January 26, 2011.**
- without a final grade being recorded is **March 18, 2011.**

XIV. Emergency procedures:

Emergency procedures have been posted in all buildings and on all elevators. Students are reminded to review these procedures for their own safety.

XV. Cell Phone Policy:

As a courtesy to the instructor and other class members, *the use of cell phones or other communication devices during lectures and demonstrations is prohibited.* Devices should be silenced while you are in the lecture room.

XVI. Copyright Statement:

Some materials in this course are copyrighted. They are intended for use only by students registered and enrolled in this course and only for instructional activities associated with and for the duration of the course. They may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act. Students are reminded to refer to the Use of Copyrighted Materials and “Fair Use Guidelines” policy on the Clemson University website for additional information:
<http://www.lib.clemson.edu/copyright/>.

XVII. Bibliography:

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- Groth. *Exploring Package Design (Design Exploration Series)*, Delmar Thomson Learning, Clifton Park, NY, 2005.
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- Johansson, Lundberg, Ryberg. *A Guide to Graphic Print Production*, John Wiley and Sons, Hoboken, NJ, 2nd Edition, 2006.
- Kelby, Scott. *7-Point System for Adobe® Photoshop®*, Peachpit Press, Berkeley California, 2008.
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- Neenah Paper, Inc. *The Dewey Color System*. Philadelphia, PA, 2006.
- Phillips, Renee. *Packaging Graphics and Design*, Rockport Publishers, Beverly, MA, 2001.
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- Sanders. *Communication Technology*. Glencoe/McGraw-Hill, Mission Hills, California, 1991.
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- Sappi. *The Standard—Managing Color*, Boston, MA, 2006.
- Tally, Taz. *Electronic Publishing- Avoiding the Output Blues*. Prentice Hall, Upper Saddle River, NJ, 2002.
- Wheeler, Alina. *Designing Brand Identity*, John Wiley & Sons, Inc., Hoboken, NJ, 2009.

GC 102 Class Calendar

Date	Lecture Topic	Lab Activity	Due in Lab
Week 1 — Assigned Homework: Vocabulary 1			
January 13	Course Orientation	<i>Alphabet Design</i> Begin Typeface Exercise	
Week 2 — Assigned Homework: InDesign® Lessons			
January 18	Typography <i>Revealed</i> –InDesign Chapter 2	<i>Intro to InDesign®</i> Begin Typography Assignment	
January 20	Page Layout and Computer Art <i>Revealed</i> –InDesign Chapter 1		• Typeface Exercise • Vocabulary 1
Week 3 — Assigned Homework: Vocabulary 2			
January 25	Computer Set Up / Bridge® <i>Revealed</i> –Photoshop 1-9,10,15&2-6&25-27	<i>Help /Tutorials</i>	
January 27	ID colors <i>Revealed</i> – InDesign Chapter 5	Begin ID Color Assignment	• InDesign® Lessons • Typography Assign.
Week 4 — Assigned Homework: Illustrator® Lessons			
February 1	Desktop Graphics <i>Revealed</i> –Illustrator, Chapters 1 & 3		
February 3	Developing Ideas	Begin Raster Vector Assignment	• Vocabulary 2 • ID Colors Assignment
Week 5			
February 8	Enhanced Techniques <i>Revealed</i> –Illustrator, Chapters 2 & 4	Begin Logo Design Assignment	• Illustrator® Lessons
February 10	Technical Drawing		• Raster/Vector Assign. • Logo Design for approval
Week 6 — Assigned Homework: Vocabulary 3			
February 15	EXAM 1	<i>Packaging Design 1 Assignment</i>	
February 17	Branding/Visual Identity		• Pkg Design 1
Week 7			
February 22	Pkg Structure & Materials	Begin Packaging Design 2 Assignment	
February 24	3D Rendering & Digital Prototype		• Vocabulary 3 • Logo Assign.
Week 8			
March 1	Google Sites to link to ePortfolio	Begin Website/ePortfolio Assignment	
March 3	Image Resolution Resizing & Cropping in Photoshop®	<i>Plotting Folding Cartons</i>	• Pkg Design 2
Week 9 — Assigned Homework: Resize/Crop Exercise			
March 8 • Intern Employer Day • Hendrix Center Ballroom • 11:15 a.m. to 4:00 p.m.			
March 10	Digital Imaging 1 <i>Revealed</i> –Photoshop 1, 2 & 5	Begin Magazine Ad Assignment	
Week 10 — Assigned Homework: • Vocabulary 4			
March 15	Color Theory	Digital Imaging 2 <i>Revealed</i> –Photoshop 3, 4 & 6	
March 17	Photo Composition	Begin Newsletter Assignment	• Resize/Crop Exercise
NOTE: March 21–25 • SPRING BREAK			

Date	Lecture Topic	Lab Activity	Due in Lab
Week 11			
March 29	• <i>Bill Treadaway Print Leadership Forum</i>		
March 31	EXAM 2	<i>Working with Master Pages</i>	<ul style="list-style-type: none"> • Vocabulary 4 • Magazine Ad Assign.
Week 12 — Assigned Homework: Digital Imaging Exercises			
April 5	Productivity & Software	<i>Working with Styles</i>	
April 7	Variable Data Printing	<i>Working with VDP in InDesign</i>	<ul style="list-style-type: none"> • Digital Imaging Exercises
Week 13			
April 12	Tone Control		<i>Students Present Digital Imaging Assignment</i>
April 14	Duotones and Posterizations	Begin Tone Control Assignment	
Week 14 — Assigned Homework: Vocabulary 5			
April 19	Folding and Imposition		
April 21	File Formats and Digital Output		<ul style="list-style-type: none"> • Newsletter Assign. • Posted Website
Week 15			
April 26	Adobe®Acrobat®		
April 28	Pulling It All Together		<ul style="list-style-type: none"> • Tone Control • Vocabulary 5
Exam Week			
Wednesday, May 4	Final Exam: 8:00–10:30 a.m.		