New York City College of Technology
The City University of New York

Communication Design Department

COMD 1162 – Raster and Vector Graphics

Course Description

Basic concepts related to the two fundamental digital graphic forms (raster and vector graphics) and learning best uses and practices for each. This course covers basic digital imaging terminology and techniques including size, resolution, color space, file elements, measurements, file formats, and scanning software and hardware. Class projects require students to explore the meaning of communication through design and how it correlates with client satisfaction and target audience. Students become proficient with both raster and vector applications, such as Adobe Photoshop and Adobe Illustrator.

2 cl hrs, 2 lab hrs, 3 cr

Prerequisites

CUNY proficiency in reading, writing and mathematics or concurrent enrollment in ENG 092R, ESOL 022R or 032R; ENG 092W, ESOL 021W, or ESOL 031W; MAT 0630 or MAT 0650 as required.

Course Objectives

INSTRUCTIONAL OBJECTIVES	ASSESSMENT
For the successful completion of this course, students should be able to:	**Evaluation methods and criteria**
(1) Describe and explain the difference between the two fundamental digital graphic forms, raster and vector. Examine the best use and best practices associated with raster and vector. weeks 1, 2, 7, 8	(1) Projects and quizzes.
(2) Demonstrate active learning. weeks 4, 5, 6, 8, 9, 11, 12, 14	(2) Group critiques of projects both on screen and printed.

(3) Demonstrate professionalism by emphasizing accuracy, correct file preparation, integrity, and timeliness in submitting design projects. weeks 4, 8, 10, 15	(3) Students will exhibit professionalism by submitting projects on time, in the appropriate file format, and correct specifications set forth for each project. Students will also show professionalism by revising projects based on classroom critiques and self-assessments.

General Education Outcomes

General Education Outcome covered:	How the outcome is covered:
Thinking Critically The student will demonstrate the ability to evaluate evidence and apply reasoning to make valid inferences.	Students will develop their critical thinking by participating in class critiques, applying standards learned in class to their own work and that of classmates
Qualitative Literacy The student will demonstrate the ability to interpret raster and vector digital forms through the creation of conceptually valid digital imagery.	Student projects and in-class discussions of work in progress.
Lifelong Learning The student will demonstrate an awareness of resources for continued lifelong learning.	Students discuss resources and techniques that they can use as references.

Teaching/Learning Method

- Lectures and Readings
- Software Demonstration and Lab Exercises
- Design Projects for Screen and Print
- Testing
- Discussion and Critiques
- Peer and Self-Evaluation

Suggested Texts

• **Adobe Photoshop CC Classroom in a Book,** by the Adobe Creative Team. Published by Adobe Press. ISBN-10: 0321827333, ISBN-13: 978-0321827333.

• **Adobe Illustrator CC Classroom in a Book**, by the Adobe Creative Team. Published by Adobe Press. ISBN-10: 032182248X, ISBN-13: 978-0321822482.

• **Lectures, reference and supplemental materials** will also be provided on Blackboard. These may include the following on-line educational references:
www.adobephotoshoptutorials.com/

www.adobe.com/support/photoshop/
www.adobe.com/designcenter/
www.grafx-design.com/phototut.html
www.pslover.com/
www.smashingmagazine.com/2007/02/03/adobe-illustrator-tutorials/
www.adobeillustratortutorials.com/
www.adobe.com/support/illustrator/
www.learnit2.com/illustrator.html
www.vectordiary.com/illustrator/best-illustrator-tutorials-articles-of-2008/

Grading

- In-class productivity 15%
- Two quizzes 25%
- Four projects 60%

TOTAL 100%

Week	Class One Lecture	Class One Lab	Class One Homework	Class Two Lecture	Class Two Lab	Class Two Homework
1	Introduction: Overview of the basic principles of raster and vector graphics. Explain the fundamental functions of each and how they are different from each other. Discuss how each are used in industry and show real world examples of each. Examples should highlight technical function as well as the difference between the two graphic forms. Pixels vs Bezier Curves. Emphasis on working Non-Destructively in Raster programs. Explain how vectors function in raster environment and vice versa, and appropriate use of each, and why we have two different programs for each.	**Brief Critique/Share of homework #1.**	Using the camera on the lab computer take a picture of yourself. In photoshop or similar program, using whatever skills the students have, plus what was discussed in class, and any additional research they must remove the background and replace it with a background of their choice. Add text to the image.	Review Class One introduction to basic concepts of raster vs. vector. Review HW 1. Shift conversation to focus on Illustrator. Discuss role of designer in the field, and role that raster and vector play in designers' workflow.	Show file hierarchies in Finder, then show file hierarchies in Adobe Bridge. Batch rename and batch resize files. Add metadata to files.	Repeat steps for homework 1: in Illustrator or similar vector program students will trace their photo creating a vector self-portrait, then add type.
2	**Adobe Illustrator: Shape Tools and The Pen Tool** *Building with Shapes:* Show how to create vector shapes, how to move them forwards and backwards on the artboard. *The Pen Tool:* is the most basic and also the most powerful and widely used tool in any vector program. Show how to create and edit shapes using Anchors, Bezier Curves, Arms, Direct Selection, and Adjusting Paths. *Fill and Stroke:* Weight, Inside,	**Brief Critique/Share of homework #1.** **Object and Paths:** Demonstrate use of basic geometric shape tools in vector programs. Show how to edit the objects once they are created using Anchor point, Whole object, Curve segment, Direction handles. Trace simple images and edit vectors for technical precision. Demonstrate *Transform* and *Select, Align,* and *Color.*	**Project 2:** Students will choose three items and create contour drawings in Illustrator using the pen and shape tools: one mechanical, one organic, one food item.	**Adobe Illustrator: Shape Tools and The Pen Tool:** Add complexity to their vector skills using the Pathfinder tools and grouping objects, etc.	Demonstrate *Transform* and *Select, Align, swatches* and *Color and color picker palette.*	Pick one sketch from each category and begin tracing in the vector program.

	center, outside, Dashed line, JOINED anchor, CAPPED point, Note different options for caps & corners; bevel, miter, round.					
3	**The Pen Tool: Part II:** A more detailed and precise look at what the Pen Tool can do and what is appropriate, professional use of this tool.	**Pen Tool Exercises:** Students will use a reference sheet of shapes and forms to build their pen tool creation and editing skills. Refine HW2	**Finish HW2**	**Discussion:** Workflows – what are they and how can they be used? What does "industry standard" mean?	**Brief Critique/Share of homework #2.** Work with students individually to improve their homework.	**Pen Tool Exercises:** Students will use a reference sheet of shapes and forms to build their pen tool creation and editing skills.
4	**Logos and Typography:** Students are introduced to different classifications of typefaces. The vocabulary of professional typography is presented and defined. Students are introduced to the websites of digital type foundries so that they can learn how to find key information about the fonts they are choosing. A page layout program is used to illustrate vocabulary terms introduced during lecture.	**Create type from basic shapes.**	**Project 3:** Create at least 10 pencil sketches for their **Personal Logo**. Logo should incorporate AT LEAST two letters and one image/form/object.	**What is effective logo design: how research and context are as important as "good design"**	**Review Sketches**	**Choose one direction and begin translating work from sketch to vector.**
5	**Vector Type:** How type behaves differently in raster and vector environments. Using the Type Tool. Editing and customizing letterforms using vector tools.	**Type Tool:** Using the Type Tool to create and edit type and letterforms	**Project 3: Personal Logo** Create first draft of Personal Logo in vector program.	How do icons and type work together?	Work in groups to give peer feedback on work in progress. Lab time to work on **Personal Logo** project.	**Continue to develop and refine Logo based on class feedback.**
6	**Printing:** Discuss how printing from a vector file works and what happens to the color of a file. Discuss variables that will affect quality of	**Type Book:** Create a 1 page document Creating a set of background boxes which will range from 10 to 10% of a specific	**Print:** Use classroom printer to print work in progress to discuss with professor and peers for	**More on printing and file delivery: knowing the right format means asking the right**	Lab time to work on projects.	**Finish Personal Logo.**

	print; service bureau, type of printer, file formats, etc.	color. Explore what happens to type as it is set into a variations of backgrounds	feedback and advice.	**questions: what is the final output? will it live on multiple platforms, media, etc.?**		
7	**Raster Graphics:** Introduction to raster graphics. Define basic terms such as pixel, resolution, file size. Understand the workflow for making image corrections to photographs. The ethics of image editing.	**Critique: Personal Logos (printed and mounted)** Demo proper materials and techniques in class.	**Finish Classwork:** Continue to work on "damaged" photos, building retouching skills.	**Raster Editing:** Read a histogram and make global tone corrections. Non-destructive editing. Retouching. Sharpening.	**Raster Graphics:** Introduction to image editing tools. Professor provides raw images to process. Professor provides "damaged" images to fix with stamp and healing brush tools.	**Finish Type Book:** Re-do any pages for the book as needed Print out and assemble **Reading: TBD**
8	**Mid-term Quiz:** Using vector program students will trace letterforms for technical accuracy. **Raster Graphics:** • Review basic functions previously covered. • Expand discussion of ethics surrounding retouching. • Emphasize always working Non-Destructively • New tools: layer masks, adjustment layers **Introduce Project 4: Poster** Show examples of professional movie posters. Discuss qualities that make a movie poster and not a book cover or album cover.	**Quiz: 30 minutes max.** **Image Editing:** • Use basic tools to add and remove items from an image provided. • Use layer masks to remove backgrounds of additional images and add to primary image. • Introduce adjustment layers and concepts of color correction workflow.	**Project 4: Poster:** Choose a topic for a poster and create at least 10 thumbnail layout sketches in pencil.	**Possible Guest Speaker or Field Trip**	If in class continue to introduce new raster editing tools, peer review of homework and lab time.	**Choose a direction for poster and develop final sketch before beginning workin on final file.**
9	**Raster Graphics:** Compositing and Copyright (why you can't always use things you find on the internet in your work.)	Provide students multiple creative commons images to mask and composite together into new compositions.	Continue working on Poster	**Continue discussion of compositing and copyright with examples.**	**Lab Day**	**Continue working on final version of Poster**

10	**Raster Graphics:** Color	Discuss RGB and CMYK color spaces, the difference between screen and print. Discuss	**Work on Poster**	**Lab Day**	**Lab Day**	**Finish Poster**
11	**Project 4 Due** **Project 5 (final): Alter-ego:** Students will create a self-portrait where, through conceptual planning and technical execution, create an alter-ego for themselves. They will create a logo/brand for the character. They will plan and shoot a photo of themselves to use as a source image and, using raster and vector tools, will create a complete composition using type and image.	**Critique Project 4 (Poster)**	**Sketch ideas, write a description of the alter-ego that includes backstory (origin) and worldbuilding.**	**Alter-ego:** Show real world examples of this type of image from advertising, editorial, and elsewhere.	**Photo shoots**	Shoot photos, edit selects and begin assembling images for final composite.
12	**Icons:** Show examples of icons from comic book characters, corporate branding, and more. This should build on Week 4 lecture.	**Class discussion:** Share ideas and sketches for **Project 5 (final): Self-portrait as Alter-Ego:**	**Create name and logo for Alter-ego**	Effective compositing or "comping" for presentation vs. final delivery.	Provide images to use for demonstration of layer blending modes, using pen tool in photoshop, filters such as gaussian blur and noise.	**Finish Classwork** **Reading: TBD**
13	**Vector Graphics:** Review vector editing tools and discuss proper use when combining with Raster Graphics. **Raster Graphics:** Advanced concepts of compositing, color correction, color effects, and more.	Demonstrate advanced techniques for compositing, selective color correction, etc.	**Continue to work on final project.**	Raster and Vector together in InDesign or other desktop publishing software.	Lab time: work on project.	**Continue to work on final project.**
14	**Layer Blending Modes, Student requests, and Topics in Raster & Vector Graphics.** • Layer Blending	**Interactive Zine continued** Lab-time to work on project	**Prepare for in-class critique** Final edits to motion type piece	**What is a portfolio?**	**Resizing images and combining into a PDF:** Show students how to open	Continue to work on final project. **Final Portfolio:** Students will

	Modes • Discussion of topics in raster and vector graphics: ethics and more.		**Reading: TBD** **Type Journal: none**		their images and properly resize them to combine into a PDF using Acrobat Pro. Lab time: work on project Demonstrate layer blending modes and discuss how they are affecting the pixels.	create PDF portfolio that includes all five projects from the semester plus process and revisions, and cover sheet with name and class information.
15	• Discuss student-generated topics and/or techniques requested. • What is "photo shopped?" What is retouched? How far can/should we go?	**Lab Time.**	**Finish Final Project.**	**Final Critique**		

Attendance Policy:

Attendance is taken and is important to success in this class. Both absences and arrival more than 15 minutes after the start of class will be marked. If excessive, the instructor will alert the student that he or she may be in danger of not meeting the course objectives and participation expectations, which could lead to a lower grade.

Academic Integrity Standards

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion.