

ARTC 1325 – Introduction to Computer Graphics (3: 2-2)

Informal Description: This course introduces students to the basics of computer graphics and basic digital imaging tools

Textbooks/Reference/Materials

- Access to <http://www.templejc.edu/dept/cis/CCollins/Collins.htm>
- Optional: Access to Intro to Computer Graphics, by R. Craig Collins, available at the Temple College Bookstore, or free pdf on class website
- Optional: Access to <http://gimp-savvy.com/BOOK/index.html>
- Floppy disks or other file storage (home computer, removable USB drive, etc.)

Please refer to the class website for details on when topics are covered and due dates
Please refer to the syllabus appendix for details on class policies

Administrivia: Information required by the Campus, but not necessarily by students

Course Competencies

CIP Code: 50.0409 (Graphic Design)

Course Title: Introduction to Computer Graphics

Course Level: Introductory

Course Description: A survey of computer design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, electronic images, electronic publishing, vector-based graphics, and interactive multimedia.

End of Course Outcomes: Define computer terminology; identify peripherals; and demonstrate page layout, multimedia, and peripherals software use.

Suggested Prerequisite: none

Year: 2007

COURSE CALENDAR (See course web site for up to date calendar, topics, and activities)

6 Week Semester	16 Week Semester	Notes	Lecture Topics	Labs
Week 1	Week 1		Syllabus/Orientation	
	Week 2		Representing Digital Images, Hardware, Cameras	
	Week 3		Bitmaps, TIFF	Lab 1 due
Week 2	Week 4		Bitmap to GIF, compression	Lab 2 due
	Week 5		GIF animation, transparency	Lab 3 due
	Week 6	Test 1	Review, Test 1	
Week 3	Week 7		JPEG, PNG	Lab 4 due
	Week 8		Editing tools, crop, resize	Lab 5 due
	Week 9		Editing tools, optimize	Lab 6 due
Week 4	Week 10		Erase Copy Clone	Lab 7 due
	Week 11		Layers, Text	Lab 8 due
	Week 12	Test 2	Review	
Week 5	Week 13		Paths, color balance	Lab 9 due
	Week 14		Video, Flash	Begin Lab 10
	Week 15	Test 3	Review	Capstone Lab 10 due
Week 6	Week 16	Final	Final (The FINAL EXAM IS DUE WELL BEFORE FRIDAY, check website for due date)	

Most labs and tests are due Friday, 11:59pm of the week mentioned.

The final exam is made up of three parts. All three parts must be completed with 2 hours of beginning. Notes:

Course Competencies

<p>Students will be able to:</p> <ul style="list-style-type: none"> • Discuss how digital images are created and stored • Use cameras and scanners to capture digital images • Compare and contrast bitmap and TIFF file formats • Construct and edit bitmap and tiff files using Paint • Discuss compressions • Construct and edit compressed gif files • Construct and edit animated gif files • Discuss Transparency • Construct and edit transparent aspects of files • Compare an contrast jpeg and png files • Create and edit jpeg and png files using advanced editing tools • Discuss optimization • Implement optimization 	<ul style="list-style-type: none"> • Discuss Layers • Create and edit images that use layers • Discuss Paths • Create and edit images that use paths • Discuss Text • Create and edit images that use text • Discuss color balance • Create and edit files that use color balance • Discuss Video • Create and edit Video • Discuss Flash • Create and edit images that use Flash • Evaluate various tools and methods to create and edit digital images
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Lab Summaries

1. Create simple vector and raster images, using Paint and Inksape, video tutorials available.
The process starts by creating a lab1 folder, and saving ball.bmp and test.svg within.
The folder and its contents are then zipped, renamed yourname-lab1.zip, & placed in the D2L Lab 1 dropbox.
A quiz in D2L covers the activity.
2. Using Paint, experiment with file types, color depth and the impact on images.
The process starts by creating a lab2 folder, and creating 6 bitmap, tif, and gif images
The folder and its contents are then zipped, renamed yourname-lab2.zip, & placed in the D2L Lab 2 dropbox.
A quiz in D2L covers the activity.
3. Animate an image. Video Tutorial available.
The process starts by opening ball.bmp and saving as lab3a.gif in a new lab3 folder, and creating a 2nd modified version as lab3b.gif. Using unFREEze, animate the files as lab3ani.gif, controlling frame rate/looping.
A bonus is available.
The folder and its contents are then zipped, renamed yourname-lab3.zip, & placed in the D2L Lab 3 dropbox.
A quiz in D2L covers the activity.
4. Further exploration of gif using GIMP, to add transparency to an image, lab4.gif. Video tutorial available.
The folder and its contents are then zipped, renamed yourname-lab4.zip, & placed in the D2L Lab 4 dropbox.
A quiz in D2L covers the activity.
5. Introduction to photo editing using GIMP to crop, scale, and adjust canvas size on a provided image, lab5.jpg
When finished, your lab5 folder should contain lab5.jpg, lab5-crop.jpg, lab5-resize.jpg, and lab5-canvas.jpg
The folder and its contents are then zipped, renamed yourname-lab5.zip, & placed in the D2L Lab 5 dropbox.
A quiz in D2L covers the activity
6. Combine provided images to introduce rotation, brightness, contrast, file optimization, the use of png for print, and balancing quality and file size for jpg web delivery. A video tutorial is available. The folder and lab6.jpg and lab6b.png are then zipped, renamed yourname-lab6.zip, & placed in the D2L Lab 6 dropbox.
7. The student will take any image they choose, and demonstrate GIMP tools, such as smudge, and clone.
The folder and the before and after image are then zipped, renamed yourname-lab7.zip, & placed in the D2L Lab 7 dropbox. A quiz in D2L covers the activity
8. Use GIMP to add text, and arrange various portions of a project in layers layers. A video tutorial is available.
Using the color tools, palettes, and web friendly Hexadecimal (base 16, Hex) colors are introduced as well.
The working version will be saved as lab8.xcf; a flattened web or print version will be saved as lab8.png or .jpg
The folder and its contents are then zipped, renamed yourname-lab8.zip, & placed in the D2L Lab 8 dropbox
A quiz in D2L covers the activity
9. A quick lab to demonstrate the threshold tool. Copy threshold-lab9.jpg, and save as lab9.jpg. Zip and submit.
10. The Capstone lab demonstrates all the skills acquired over the semester. Combine and edit images and drawings, use transparency, text, and layers. Save the working file as yourname-lab10.xcf. Save the image in print quality, called yourname-lab10.png. Optimize the image for web delivery, calling it yourname-lab10.jpg. Include a Word document that describes all the steps you used in the project, saved as yourname-lab10.docx*