OBJECTIVE :

Introduces the fundamentals of graphics programming. This treatment is less theoretical and more applied. Coverage includes a short review of HTML, CSS and JavaScript. JavaScript familiarity is essential as the main vehicle of expression along with HTML5 canvas. That means the student must have an understanding of variables, assignment, arithmetic and boolean operators, loops, branches and functions (methods).

OUTCOMES :

The successful student will:
  begin by reviewing and
   demonstrate the ability to dynamically input data into a web page;
   demonstrate the ability to dynamically output information from a web page;
   demonstrate the ability to dynamically repeat statements in a loop within a client-side program;
   demonstrate the ability to make decisions dynamically within a client-side program;
   demonstrate the ability to create separate functions or methods within a client-side program;
  and continue to:
   understand the fundamentals of how computer graphics works;
   understand how the HTML5 canvas element works;
   understand how to use javascript arrays, objects, functions, loops and selection to control canvas output;
   understand how to manipulate images doing fundamental image processing;
   understand how to manipulate cellular automata, 1d and 2d;
   understand how to implement simple physics velocity and gravity;
   understand how to represent & manipulate matrices of points representing objects.

All competencies will be assessed through a series of assignments and exams.

TEXT and MATERIALS: (http://jbwyatt.com/cis377.html)

```
Core HTML5 Canvas: Graphics, Animation, and Game Development 1ˢᵗ Ed.
 by David Geary, Prentice Hall, 2012


HTML5 Canvas, 2nd Edition Native Interactivity and Animation for the Web
  by Steve Fulton, Jeff Fulton, O'Reilly Media, 2013
```
A USB flash drive (1GB+) is very useful and relatively cheap ($3 from me).

CONTACT INFORMATION: (**http://jbwyatt.com/contact.html**)

My E-mail address is: wyatt@clarion.edu   or **wyattwyatt@gmail.com (preferred)**
My Web URL is **http://jbwyatt.com/**
My office is in **141** Becker Hall. My office telephone is (814) 393-**2643** - feel free to leave a message. Come see me!
Office hours are as posted, but other hours can be arranged.

TOPICS / SCHEDULE (42 classes) (`http://jbwyatt.com/cis377.html`)   Topics and coverage is somewhat dynamic and is updated often on the class website.

```
Course Intro
* CIS 270 is a prerequisite.
 Should be quickly ~comfortable with:
 1. integrating html, css AND JAVASCRIPT!!
 2. create listener with a callback
 3. callback functions should be able to access a specified html element (by ID)
 4. functions, loops, if statements, objects, arrays
 5. generating html and css via javascript

Canvas
Arrays, 2d, objects
Cellular Automata 2d, 1d
Image Processing
Simple Physics
3d Cube: Point, Face, Edge Arrays
Particle System: Prototypes
```

GRADES: (`http://jbwyatt.com/grades.html`)   1,000 total points

Grades are determined by your % score: 90+ = A ;   80 – 89 = B ;   70 – 79 = C ;   60 – 69 = D ;   below 60 = E.
Grades are determined as follows:

~50%: tests and quizzes (~500 points)

Two tests (make-up **only** with prior notice and excuse).
Various 5-10 point quizzes. Some quizzes may be online.

~50%: assignments (~500 points)

6 to 7 programs - programs are worth between 25 and 100 points

  While in class you are expected to be attentive and to participate and to take notes. Participation means constructive and informed (by way of doing the assignments and reading) discussion about the subject material.

SPECIAL NEEDS and CONSIDERATIONS:

Special circumstances that may affect your performance in the class should be brought to my attention. Any student requiring accommodations for taking notes or tests should make arrangements to discuss their needs with me after the first class.

Copying code is cheating. Allowing others to copy your code is cheating. You must protect your intellectual property as you protect your personal property - with all reasonable measures.

You must *write your code on your own*, not as part of a group. Make efforts to avoid even the *appearance* of impropriety. Penalties will be severe: a grade of zero for all conspirators.