Course Syllabus

A.	Course Number-Section Number: Course Title: Campus and Room Number: Days and Times:	Web Development and Programming Fundamentals Fall 2023 online section CS103-IN1 N/A N/A

B.	Program Name:	Mathematics/Computer Science
	Instructor Name:	Linda Perel

C.	Contacting the Instructor –	
	Campus and Office Number:	North K154 (teacher's mailbox is in K249)
	Instructor Phone:	716-851-1332
	Department Secretary Phone:	716-851-1367
	e-Mail:	perel@ecc.edu
	LMS website	Brightspace
	Office Hours:	In-person: MW 2-2:50pm, Fri 2-3:30pm | Tu 1-1:50pm | Th 11-11:50am Remote: I will open my WebEx meeting room as well on Fridays at 2-3:30pm. The link to the meeting room: https://sunyerie.webex.com/meet/perel *We can also meet any other times in WebEx, upon prior arrangement.

D.	Course Description:	This course covers the fundamentals of web development. Topics include basic concepts of the Internet and World Wide Web, and security and privacy. Topics also include development of a web site and web pages, development of dynamic and interactive web-based capabilities. The client-side technologies include HTML5, CSS, and JavaScript. Hands-on web development and programming exercises will be included. The course is open to students in any curriculum. Prerequisite: Basic knowledge on how to use a computer or a Computer Literacy course. Most of the course will be spent between learning HTML5, CSS3 and JavaScript. These topics are a substantial subset of the topics of CS215 Web Development and Programming I. Brightspace will be used in this course, an online course management system.

E.	Text / Course Materials: *Enter Title, edition, and publisher, year, and ISBN number.*	This textbook is required: New Perspectives on HTML5, CSS3, and JavaScript, 6th ed. by Patrick Carey, Cengage Publishing (softcopy version of book ISBN: 978-1-305-50392-2.) There are 2 basic options: --TO BUY OR RENT THE PHYSICAL BOOK OR ETEXT: Buy the softcopy, binder-ready copy, used book, e-text purchase, or e-text rental. Search using the book's complete title and author to find your

	desired version of the book.
	Updtd 9-8-23 7am: The bookstore is selling the following e-text option which allows you to access <u>all</u> Cengage's e-texts for 1 semester – "unlimited." This is nice if you need more than 1 Cengage textbook this semester:
	Cengage Unlimited eTEXTBOOKS (4-month access) $87.50 ISBN: 9780357693339
	-- <u>TO BUY ACCESS TO A MINDTAP course</u>: Buy access to the Cengage digital course called MindTap that has been (or will soon be) set up for this class. ***It will contain the required e-book but other software and apps that are <u>not</u> required. I will supply you with directions on how to access this MindTap course. I am not sure if the bookstore offers this option.***
	SEE SPEARATE HANDOUT called **CS103 Required Textbook & Purchasing Tips**. (To be posted soon in Brightspace, in the Syllabus folder as well as in the **Preliminary Course documents** folder.)
	<u>Other</u>**:** Web development tools **-** We will start with Notepad, which is a simple editor. It is analogous to TextEdit on the Mac. And then we will use a free HTML editor and an Internet browser to create webpages. We will use Notepad at first but since the work is simplified using an HTML editor, we will then use Komodo Edit.
	It is recommended to test webpages in browsers. Browsers are freeware (free), and so you can Google them by name to locate and download them to your own computer. For this course one browser is sufficient. Chrome will be used in the seated class.
Affordable Instructional Material (AIM) or Open Educational Resource (OER) Option:	N/A

F.	**Library Resources:**
	Textbook is on reference in North library. Ask at the front desk.

G.	**Course Outcomes:**

1. Demonstrate basic competency in web development and programming.
2. Explain the basic concepts of the Internet, client-server architecture, features, and tools.
3. Explain technological features of client-server interaction including the HTTP protocol, cookies, maintaining state, and limitations thereof.
4. Explain and distinguish the types of software capabilities that can be programmed for the client side and the server side.
5. Develop a basic web site and set of web pages using a modern web development tool.
6. Explain and apply basic web design and usability principles.
7. Develop and incorporate software capabilities in web pages using the JavaScript programming language.
8. Develop and incorporate dynamic capabilities in web pages using JavaScript.
9. Develop web pages that include the use of forms and use JavaScript for client-side operations (e.g., data entry validation).

10. Explain the operation of server-side software and give examples. (OPTIONAL)
11. Explain the processing of forms by server-side software and give examples. (OPTIONAL)
12. Deploy a basic web site on a web server. (OPTIONAL)
13. Explain basic privacy and security issues.
14. Explain applications of web-based technology in the real world and give examples.
15. TECHNOLOGY OBJECTIVES: Students will be able to demonstrate "hands on" proficiency in using state-of-the-art computer software tools and/or languages to accomplish the above course objectives. All the above outcomes involve the use of computer and web technology.
16. Use CSS (Cascading Style Sheets) to format the web page.

H.   SUNY Erie Institutional Learning Outcomes (ILOs):

Not applicable

I.   SUNY General Education Knowledge and Skills Areas (if applicable):

Not applicable but this course does count as a Liberal Arts elective

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J.   Grading Determination:

** Notice the unconventional ranges for other than for A:

A- 88 to 89; **A** 90 to 100   **D-** 55 to 57; **D** 58 to 62 **D+** 63 to 65
B- 77 to 79; **B** 80 to 84; **B+** 85 to 87   **F** 54 and below.
C- 66 to 68; **C** 69 to 73; **C+** 74 to 76

K.   Testing/Means of evaluation:

points	*Evaluation category*:
40%	Homework
55%	Tests
5%	participation in discussion forums

Each item and test will be scored based on 100 points.

To figure your grade:
- Average all homework items and multiply by .40
- Double your highest test score and then average all four test scores and multiply by .55
- Multiply your discussion forum score by .05
- Add all 3 numbers together. Convert to letter grade using part **J**. above.
- **Homework –** You will complete approximately 8 graded homework assignments. They will come mostly from out of the book, from exercises in chapters ("tutorials") 1-4, 6, 7, and 9. I will drop about 2 of your lowest homework assignment scores. Try to stick to homework due dates.

  Some homework assignments will involve completing the *tutorial*. A *tutorial* is what textbook author calls a chapter. The method of the textbook is hands-on and so as you read through the chapter – or tutorial -- you are also actively completing the steps of an exercise that runs through the entire chapter at your computer. You modify given web page files or create new ones. Other homework will consist of either *Review Assignments* or *Case Problems*. (The *Review Assignment* is *very* similar to the exercise running through the tutorial.) Data files for textbook are available, (for PC and Mac). Separate directions will be made available for accessing the data files.

- **Tests** – There will be **3 tests**. They are not cumulative. The highest test score will be counted twice. They will include multiple choice, short answer, essay questions and writing short code segments. For online classes, each test will be a timed online Brightspace test and may include a shorter written part that you will do on paper. You will then scan it in or take a picture of it and submit the file to a drop box.
- **Discussion forum(s) –** The first discussion forum is to introduce yourself. There will be 1-2 forums. **Other:**
- **Chapter coverage and "*Activities Folders*"**: All of Tutorials 1, 2, and 9 and parts of Tutorials 3, 4, 6, 7 and 10. (Note the following. The "activities" and notes for this course are bundled in zipped "Activities" Folders so that once you retrieve an Activities folder you will be working with that material for usually about 1 to 2 weeks, accessing the corresponding files for this material in the location where you stored it.)
- **Textbook reading -** Read all assigned readings in the *Tutorials* i.e. chapters of the textbook/e-text. The Homework assignments will deal with these chapters and you will be tested on this reading.

L.	**Attendance Requirements:**

1. <u>Seated classes</u>: You are expected to attend all classes. (High absenteeism correlates to "F" grades.) It is your responsibility to find out what you missed from a classmate or myself if you are absent from class. <u>Online classes</u>: Log into Brightspace on a regular basis, say, 3-4 times per week, to keep abreast of course activity and announcements.
2. Do <u>not</u> miss any tests. If you must miss, for a dire emergency, contact me ASAP to make other arrangements.

M.	**Classroom Expectations:**

1.   Mute cell phone and refrain from use in class.
2.   Pay attention. Be polite. Do not engage in behavior that disrupts learning
3.   See me ASAP if encountering obstacles to completing the course and I will try to help.

N.	**Services for students with disabilities and Student Support center** (general webpage next line) https://www.ecc.edu/student-support **or** myecc.ecc.edu/student/supportservices

Student Access Center (SAC) (Services for students with disabilities)
SUNY Erie Community College recognizes the right of qualified individuals with disabilities to access an education through appropriate accommodations. Disabilities can be but are not limited to physical limitations and chronic health conditions, to mental health and learning disorders. A Student with a documented disability may be eligible to receive reasonable accommodations through the Student Access Centers located at each campus to access education. SUNY Erie looks to help eliminate barriers and disadvantages that may exist to all students pursuing an education to the best of their ability. If you would like to speak with a Counselor to determine eligibility, please contact your campus Student Access Center

City: Student Access Center	Post Office, Rm 266	851-1189	Densie Hurst
North: Student Access Center	Library, D Building Rm D114	851-1495	Jenny Brodfuehrer
South: Counseling Center	Bldg. 3 Rm 3120	851-1830	Jenny and Denise

Director (as well as Veterans Services Advisor): Dan Frontera
Emails: brodfuehrerj@ecc.edu | hurstd@ecc.edu | vafrontera@ecc.edu

https://www.ecc.edu/student-support/inclusive-support.html **or** myecc.ecc.edu/studentaccesscenter

Student Support Center summary of services
North, Rm 213, Spring Student Center, 716-851-1488

The counselors and mentors that work there are available to help students navigate their college education from start to finish. They can help you enter/re-enter SUNY Erie on the right foot, talk with you about how your program corresponds with your goals and interests, and even help you with course selection so that you make timely progress toward earning your degree. They also host transfer fairs, where you talk directly with admissions representatives from nearby colleges, and if you choose to transfer to a bachelor's degree program, they can help make the transition go a bit more smoothly. The SSC staff also offer free workshops on tons of self-help and academic success topics; workshop schedules are available. Call for an appointment or visit: myecc.ecc.edu/support-counseling

O.	**Topical Outline:** see the last listed item of this syllabus.

P.	**Starfish® Integrated Course:**	**This is a Starfish® Integrated Course**: Your success is important to us!
		SUNY Erie has partnered with Starfish Retention® Solutions as part of our continual effort to enable student success in your coursework and overall educational goals. I will be using the **Starfish®** electronic tool to provide feedback regarding your progress in this course. You may at times receive emails from Starfish® that include feedback from me on attendance, grades, performance in the classroom, and available services, such as the library, skills labs, and tutoring. This information will be shared with Student Support Services and other service professionals on campus to help facilitate success in this course and general academic success. **Remember to read your SUNY Erie email on a regular basis** to monitor your progress and respond to recommendations when given. If you have questions regarding Starfish contact **starfish@ecc.edu**.

Q.	**Academic Integrity:**	SUNY Erie Community College assumes that students will behave with integrity. Academic dishonesty, as defined in the Student Code of Conduct, will be actionable by the department and faculty, working within the procedures defined by the college. Academic dishonesty accusations must be documented and investigated. Students have the right to dispute accusations of academic dishonesty through the student academic grievance policy.

R.	**Syllabus Prepared By:**	Linda Perel last update: 9-8-2023

Other sections not part of syllabus template:

Section 1: **Log in accounts**
1. Your Brightspace and ECC username and password are the **same**.
   - Go to myusername.ecc.edu to retrieve your username and password OR see the next bullet.
   - Create your account with this format:
     - **Username**: first six letters of last name + first initial + middle initial, if exists + two digit day of birth + last digit year of birth *(new format for Fall 2011 and later)*
     - **Password**: (supplied to you by ITS or retrieve it at myusername.ecc.edu)

EXAMPLE: For student **Mary K. Reynolds** whose birthday is **05/15/2004**:
Username: reynolmk154
Password: (supplied to you by ITS)[1]
E-mail: reynolmk154@ecc.edu

2. If you cannot log in, ask your teacher for help, or contact ITS Service Desk, 851-1835 or go to servicedesk.ecc.edu and submit a ticket. (Log in if necessary.)

3. Tip: If you are off-campus and prompted to log into an ECC web portal, try typing your full username with domain (i.e. your ECC email address) if your username alone does not work.
Example: Type reynolmk154@ecc.edu instead of reynolmk154.

Section 2: **Requirements for your computer**
- Online PC or Mac computer with Internet access. Anti-virus software is recommended.
- If you experience computer failure during the semester, have a backup plan. For example, have access to an alternate computer. Make periodic backup copies of important schoolwork.
- See Help within Brightspace for recommended browsers compatible with it. I use Chrome.
- Turn off pop-up blockers. If you notice links that do not open windows or documents that you are expecting you may have some pop-up blockers turned on. An indication in Chrome that a popup is being blocked is the appearance of a red icon in the right side of the address bar. Click it and resolve the issue.
- Early in the semester we will dabble with Notepad (on Windows PCs) and textEdit on Macs. For help in adjusting the setting for textEdit, refer to the document called, "Tip for Mac and TextEdit editor". Find it in Brightspace, in *Course Resources* module in *Other* submodule.

Section 3: **Other Resources**
- **Computer Labs:** ID card is required to use the labs. There are open computer labs in K238 and in the North Campus Library. In K238, there are peer tutors who are Computer Science majors who can help you
- **Other:**
  - For online learning tips visit https://www.ecc.edu/academics/online-learning.html
  - Registered students have an ECC computer/webmail account and OneDrive space for file storage.
  - For any technical computer related issues or for online technology help, call 851-1835 or visit servicedesk.ecc.edu
  - Zipping Files - For quicker transmission and convenience of bundling several files together, you will zip (compress) them first. Follow the assignment directions to know which files to zip together and how to name them. Using Windows, select the files (or folder of files), right-click, select Send to > Compressed Folder. (If necessary, use WinZip.) Refer to documents that explain zipping and extracting files located in Brightspace, in *Course Resources* module.
  - Information pertaining to Covid policy: https://www.ecc.edu/Coronavirus-Information

Section 4: **Communication**
- Email me at **perel@ecc.edu** or in Brightspace's messaging system. I spend more time in ECC webmail, but I use both email systems.
- Check announcements in Brightspace regularly.
- Graded discussion forum: You will participate in several of these. If you do an honest effort and keep the following in mind you should earn full credit.

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[1] You can also retrieve you username and initial password at myusername.ecc.edu

- o *Keep your responses positive.*
- o *Be polite; following online netiquette (Watch your manners.)*
- o *Give your response some forethought.*
- o *Keep your response relevant to the topic.*

N. Topical Outline: (See separate handout for detailed listing of V through XII)

I. Internet and World Wide Web (WWW or Web)   ½ week
1.   Introduction to the Internet and the We
2.   How things work
(e.g., URLs, HTTP, HTTPS, Internet addresses, domains)
3.   Other nets such as intranets and extranets
4.   Client-server architecture
5.   Examples

II. Client side and the server side software technology   ½ week
1.   Client-server interaction; how the underlying software works
2.   Web browsers and other clients; client functions, features,
and differences
3.   Web servers and other servers; server functions, features,
and differences
4.   Technological features of client-server interaction including
the HTTP protocol, cookies, maintaining state, and limitations these
5.   Examples

III. Designing and Developing a Web Site   ½ week
1.   Organization of the site
2.   Navigation
3.   Supporting major browsers
4.   Designing for ease of site maintenance and extensibility
5.   Basic design and usability principles
6.   Examples

IV. Designing and Developing Web Pages- HTML   2 ½ weeks
1.   Static pages versus dynamically generated pages
2.   Basic design and principles
3.   Use of a Web development tool
4.   Content structuring of paragraphs, lists, tables, etc.
5.   Web colors
6.   Inserting links to local pages and to other remote site pages
7   Optimizing and inserting media in a Web page
(e.g., images, audio, video)
8.   Examples

V. Designing and Developing Web Pages – CSS   1 ½ weeks
1.   Inline, embedded and external style sheets
2.   Precedence and inheritance
3.   class and id attributes
4.   Styles for fonts and text
5.   Box model
6.   Positioning elements on the page (position, top, left, etc)
7.   Examples

VI. JavaScript Programming – Part I   3 weeks
1.   Fundamentals of JavaScript
2.   Data types
3.   Decision, repetition, and other control structures
4.   Functions and parameters
5.   Scope and duration of variables and identifiers
6.   Arrays

       7. Examples

VII. JavaScript Programming – Part II   1 week
1. Event model
2. Events
3. Event handling
4. Examples

VIII. Developing Web Forms   1½ weeks
1. Fundamentals
2. Form elements
3. Communication with server via the HTTP Get and Post commands
4. Passing the form input data to the server
5. Using available online resources (e.g., example scripts)
6. Examples

IX. JavaScript Programming – Part III   1 week
1. Implementing basic dynamic features using JavaScript
2. Implementing navigation mechanisms
3. Implementing animations
4. Implementing interactive mechanisms and features
5. Using available online resources (e.g., example scripts)
6. Examples

X. JavaScript Programming – Part IV   1 week
1. Implementing features for form processing
2. Implementing mechanisms to facilitate form input by user
3. Implementing form input data validation
4. Using available online resources (e.g., example scripts)

XI. Privacy and Security   ½ week
1. Privacy issues
2. Problems and threats
3. Solution technology to guard against threats
4. Technical approaches to protect privacy and security
5. Examples

XII. Server-Side Programming (OPTIONAL)   1 week
1. Responding to Client Requests for Services
2. Overview of alternatives for the server side
(e.g., CGI, ASP.NET, JSP, etc.)
3. Server-side program structure and tasks
4. Encoding and decoding name-value pairs
5. Environment variables
6. Program output structure
7. Approaches to maintaining session state information
8. Common Web servers (e.g., Apache, Microsoft IIS, Netscape
Enterprise Server, Oracle Web Application Server, etc.)
9. Organization of information on the server

XIII. Real World Applications of Web Technology   ½ week
1. Examples that illustrate the Web development and programming
topics listed above
2. Industry applications such as e-commerce, B2B, among others
3. Government applications
4. Education applications

XIV. Evaluation   1 week