



**COURSE OUTLINE**

**SCHOOL OF DESIGN**

**DIGITAL SYSTEMS AND SOFTWARE**

**BACHELOR OF DIGITAL EXPERIENCE DESIGN**

**Professor's Name: Dr. Dave Colangelo**

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**Phone: 416-415-5000 x3755 (email preferred)**

**Office: Room 326, WFD**

**Out of Class Assistance: By Appointment Only**

**Course Number: BDES1001**

**Course Section CRN: 10362**

**Room Number: Room 204, WFD**

**Academic Year: 2018-19**

**Term: Fall 2019**

**Day and Time: Thursday, 12-3pm**

**FOR OFFICE USE ONLY**

**ORIGINATOR:**

**SIGNATURE**

**August 28, 2019  
DATE**

**CHAIR:**

**SIGNATURE**

**August 28, 2019  
DATE**

**DATE OF REVISION: August 2019**

**Other Specific Course Information**

**PROFESSOR BIO:**

Dave Colangelo is an artist, educator, and researcher based in Toronto, Canada. He is a founding member of [Public Visualization Studio](http://publicvisualizationstudio.com). His writing, research, and practice uses media architecture (urban screens, LED façades, and public projection) as a means to support critical and creative engagements with the city, public art, design, and information. More info at: <http://davecolangelo.com>.

**COURSE DESCRIPTION:**

This course is an overview of the historical evolution of digital media and digital systems and software including operating systems, devices, network communications, data storage, artificial intelligence and machine learning, and their applications. As a practical component, students will examine and design human-centred applications and prototypes in a variety of digital forms.

## COURSE OUTCOMES:

Upon successful completion of this course the students will have demonstrated the ability to:

1. Explain how the operation of relevant technological systems in user experiences has changed over time.
2. Examine the development process of digital products, systems and services in order to determine where human-centred design principles should be implemented
3. Compare digital design tools to determine their capabilities and limitations before they are used in the digital design process
4. Choose the appropriate tools to design digital assets for their use in digital interactive experiences

## EVALUATION CRITERIA (assignments, projects, tests, quizzes, exams, etc.):

Evaluation Tool & Description	Date/Week:	% of Final Grade:	Instructions/Rubric to be Provided? (Yes/No)	Links to Course Outcomes
Assignment #1 – Timeline	5	20	Yes	1, 2
Assignment #2 – Web	7	15	Yes	3, 4
Assignment #3 – Programming	7	15	Yes	3, 4
Assignment #4 – VR	12	15	Yes	3, 4
Assignment #5 – AR	12	15	Yes	3, 4
Assignment #6 – Digital Experience Product/Service Pitch	15	20	Yes	1-4

## GRADING SYSTEM

The passing grade for this course is: D

A+	90-100	4.0	B+	77-79	3.3	C+	67-69	2.3	D+	57-59	1.3	Below 50	F	0.0
A	86-89	4.0	B	73-76	3.0	C	63-66	2.0	D	50-56	1.0			
A-	80-85	3.7	B-	70-72	2.7	C-	60-62	1.7						

Excerpt from the College Policy on Academic Dishonesty:

The *minimal* consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, essay, project, or any evaluated material will be a grade of zero on that material.

To view George Brown College policies please go to: [www.georgebrown.ca/policies](http://www.georgebrown.ca/policies)

### Assignment #1 – Week 5 Timeline

In small groups, pick a contemporary product or service that includes some kind of digital device/experience. Trace it back through time, noting key moments in the history of digital systems and software that make that product or service possible today. Create an

illustrated timeline and present it to the class, incorporating evidence from our readings. See rubric (to be provided and discussed in class) for more details.

**Assignment #2 – Week 7**  
**Web**

Equipped with some basic knowledge of web design, create a simple digital user experience that you can test and present to your classmates. Part of your grade will be based on a peer evaluation, and your participation in the peer evaluation process. See rubric (to be provided and discussed in class) for more details.

**Assignment #3 – Week 7**  
**Programming**

Equipped with some basic knowledge of programming with Processing, create a simple digital user experience that you can test and present to your classmates. Part of your grade will be based on a peer evaluation, and your participation in the peer evaluation process. See rubric (to be provided and discussed in class) for more details.

**Assignment #4 – Week 12**  
**VR**

Equipped with some basic knowledge of VR programming, create a simple digital user experience that you can test and present to your classmates. Part of your grade will be based on a peer evaluation, and your participation in the peer evaluation process. See rubric (to be provided and discussed in class) for more details.

**Assignment #5 – Week 12**  
**AR**

Equipped with some basic knowledge of AR programming, create a simple digital user experience that you can test and present to your classmates. Part of your grade will be based on a peer evaluation, and your participation in the peer evaluation process. See rubric (to be provided and discussed in class) for more details.

**Assignment #6 – Week 15**  
**Digital Media Product/Service Pitch**

Based on your experiences and knowledge of various digital devices and systems in this course (computers, the internet, mobile phones, VR, AR, motion capture, etc.), propose a new service or product that incorporates at least one of these devices or systems. Outline the capabilities and limitations of each digital device and/or system and discuss the reasons for selecting it to implement your product and/or service. In small groups, you will create a draft of your pitch (which should include some sketches, a mood board, and a lo-fi mockup) in Week 14, receiving feedback from the professor, and deliver a 5-minute pitch presentation Week 15. You will also submit a 1000-word description of your product/service on Medium (<https://medium.com/>). See rubric (to be provided and discussed in class) for more details.

**TESTING AND ASSIGNMENT POLICY:**

Late assignments are subject to a 10% penalty on your project grade, which can heavily affect your course grade depending on the percentage of your final grade the project is worth.

Projects submitted more than five days late may not be accepted. If you need an extension on a project deadline, speak with me as early as possible to discuss your options.

### **Resources and Support for Students**

The College is committed to the success of its students. To this end, a number of academic and administrative departments and services have been developed to support them. It's important for you to know what some of these services are in case you have to offer students advice for remediation or information on where to receive appropriate counselling.

- **Library Learning Commons (LLC):** Situated at St. James (at 200 King East, the main floor and basement), the LLC provides open access computer services, Microsoft Office and course-related software, and printing/copying services; and provides research materials in a variety of formats.
- **The Tutoring and Learning Centre (TLC):** Is located in Room 430A and is available to all post-secondary students at the College. TLC delivers assistance to students for English and math and is staffed by peer tutors and fulltime professors.
- **The Peer Tutoring Program:** Is for students who're having difficulty in a subject. There is no charge to the student receiving the tutoring. Peer Tutors are found in the Orange Box at 230 Richmond and in Room 518 at 341 King.
- **Counseling & Disability Services:** Students with physical, emotional and/or learning disabilities can obtain support to help them with their studies through the Disability Services Department. Counsellors are available to help students with personal, career, or school-related problems. Contact 416-415-5000 ext. 2107 or [letstalk@georgebrown.ca](mailto:letstalk@georgebrown.ca)

### **REQUIRED MATERIALS:**

All materials will be uploaded as PDFs or web links to Blackboard. Please check Blackboard and the Learning Schedule below for details.

### **RESOURCE LIST:**

1. Balbi, Gabriele and Paolo Magaudda. 2018. "Chapter 2: The Computer" *A History of Digital Media: An Intermedia and Global Perspective*. New York: Routledge.
2. Balbi, Gabriele and Paolo Magaudda. 2018. "Chapter 3: The Internet" *A History of Digital Media: An Intermedia and Global Perspective*. New York: Routledge.
3. Balbi, Gabriele and Paolo Magaudda. 2018. "Chapter 4: The Mobile Phone" *A History of Digital Media: An Intermedia and Global Perspective*. New York: Routledge.
4. Girardin, Fabien. 2016. "Experience Design in the Machine Learning Era" *Medium*. <https://medium.com/@girardin/experience-design-in-the-machine-learning-era-e16c87f4f2e2>
5. McEwen, Adrian, and Hakim Cassimally. 2014. "Chapter 1: The Internet of Things: An Overview" *Designing the Internet of Things*. Chichester, England: Wiley. (E-book)

available on GBC Library Website)

<https://login.gbcprx01.georgebrown.ca/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cat01044a&AN=gbc.720222&site=eds-live&scope=site>

6. Damiani, Jesse. 2018. "VR and AR Mark the Greatest Revolution In The History of UX/UI Design." *Forbes*. <https://www.forbes.com/sites/jessedamiani/2018/06/21/vr-and-ar-mark-the-greatest-revolution-in-the-history-of-uxui-design/#43b43cee68a6>
7. Etienne, Alexandra. 2017. "Augmented Reality in 10 lines of code." <https://medium.com/arjs/augmented-reality-in-10-lines-of-html-4e193ea9fdbf>

**Learning Schedule / Topical Outline (subject to change with notification)**

Week	Topic / Task	Content / Activities	Resources	Assessment
1 Sept 5 <sup>th</sup>	Introduction	Ice Breakers Discuss Syllabus In-Class Survey Group Activity	You! The most important resource ☺	None
2 Sept 12 <sup>th</sup>	A Short History of Digital Systems and Software; The Computer, The Internet, The Mobile Phone	Lecture Group Activity  Discuss Assignment #1 - Timeline	Excerpts from #1, #2, and #3	None
3 Sept 19 <sup>th</sup>	The Future-Present of Computing and Design I: AI and Machine Learning	Guest Lecture (TBD) Group Activity	#4	None
4 Sept 26 <sup>th</sup>	The Future-Present of Computing and Design II: Internet of Things	Lecture Group Activity	#5	None
5 Oct 3 <sup>th</sup>	Assignment #1 - Timeline Presentations  Intro to Web Development	Lecture In-Class Activity In-Class Working Session for Assignment #2 - Web	Glitch.com	Assignment #1
6 Oct 10 <sup>th</sup>	Intro to Programming	Lecture In-Class Activity In-Class Working Session for Assignment #3 - Programming	Processing.org	None
7 Oct 17 <sup>th</sup>	Peer-Review + Mentorship	In-Class time to evaluate peer's work, critique, and offer advice and assistance.  Mid-term course feedback	You!	Assignment #2  Assignment #3
8 Oct 24 <sup>th</sup>	<b>INTERSESSION:</b> Note: Students who have a concern with their academic standing in this course should consult their instructor.  For information on withdrawing from this course without academic penalty, please refer to the following for important academic dates: <a href="http://www.georgebrown.ca/registernow/important-dates.aspx">http://www.georgebrown.ca/registernow/important-dates.aspx</a>			
9 Oct 31 <sup>st</sup>	Let's get physical: Demo Day	Hands and heads-on demos	#6 Kinect Mo-Cap AR, VR devices in GBC Lab	None
10	Intro to Programming for VR	Lecture	Glitch.com	None

<b>Week</b>	<b>Topic / Task</b>	<b>Content / Activities</b>	<b>Resources</b>	<b>Assessment</b>
Nov 7 <sup>th</sup>		In-Class Activity In-Class Working Session for Assignment #4 – VR		
11 Nov 14 <sup>th</sup>	Intro to Programming for AR	Lecture In-Class Activity In-Class Working Session for Assignment #5 – AR	#7	None
12 Nov 21 <sup>st</sup>	Peer-Review + Mentorship	In-Class time to evaluate peer's work, critique, and offer advice and assistance.	You!	Assignment #4 Assignment #5
13 Nov 28 <sup>th</sup>	Assignment #6 - Digital Experience Product/Service	Discuss Assignment Group work: ideation, mood boards, sketches	You!	None
14 Dec 5 <sup>th</sup>	In-Class Working Session	In-Class Working Session	You!	None
15 Dec 12 <sup>th</sup>	Presentations	Presentations  Course Feedback	You and Your Digital Experience Product/Service Pitches	Assignment #6
<b>Please note: this schedule may change as resources and circumstances require.</b>				
For information on withdrawing from this course without academic penalty, please refer to the College Academic Calendar: <a href="http://www.georgebrown.ca/Admin/Registr/PSCal.aspx">http://www.georgebrown.ca/Admin/Registr/PSCal.aspx</a>				