COURSE OUTLINE		
TERM: Spring 2019	**COURSE NO: COMP 301**	
INSTRUCTOR:	**COURSE TITLE:** **Computing Technologies in a Digital Culture**	
OFFICE: LOCAL: **E-MAIL:** @capilanou.ca	**SECTION NO(S):**	**CREDITS: 3.0**
OFFICE HOURS:		
COURSE WEBSITE:		

Capilano University acknowledges with respect the Lil'wat, Musqueam, Squamish, Sechelt, and Tsleil-Waututh people on whose territories our campuses are located.

COURSE FORMAT
Three hours of class time, plus an additional hour delivered through online or other activities for a 15-week semester, which includes two weeks for final exams.

COURSE PREREQUISITES
45 credits of 100-level or higher coursework, including COMP 101 or COMP 115.

CALENDAR DESCRIPTION
This course provides an exposé of current and emerging digital technologies and their impacts on individuals and society. Students learn some of the underlying principles and inner workings of digital technology. They link this understanding to the ramifications of digital technology on a range of economic, legal, environmental, and ethical issues, such as privacy and freedom of expression, security and crime, the nature of work and money, pollution and resource use, and intellectual property rights. Students learn to think critically about technologies, and to argue effectively about their potential impacts.

COURSE NOTE
COMP 301 is an approved Science and Technology course for Cap Core requirements.
COMP 301 is an approved Science course.

REQUIRED TEXTS AND/OR RESOURCES
Tavani, Herman T. *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing*. 4th ed., Wiley, 2016.

COURSE STUDENT LEARNING OUTCOMES
On successful completion of this course, students will be able to do the following:

- Express a logical construct using formal structures and/or language;
- Use a formal language to describe and/or construct a query for structured data;

- Apply computational thinking strategies to solve a problem and express the solution algorithmically;
- Explain the principles that underlie the implementation of a specific technology*;
- Engage in a meaningful debate about the impacts of technology, and use logic, evidence, and analysis to make and refute arguments:
    - Critically analyze both the technical and social aspects of the application of a specific technology*;
    - Identify the suite of technologies that contribute to a specific social issue;
    - Illustrate how the adoption of a specific technological innovation exacerbates and/or raises a social issue;
    - Generate a hypothesis about the likely impacts of an emerging technology and gather evidence to support or refute the claim.

* See Course Content for examples of the types of topics and technologies that might be covered.

Students who complete this Science and Technology course will be able to do the following:

- Apply numerical and computational strategies to solve problems;
- Assess the cultural, economic, and political effects of technology;
- Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
- Demonstrate how a problem, concept, or process can be modelled numerically, graphically, or algorithmically;
- Participate in scientific inquiry and communicate the elements of the process, including making careful and systematic observations, developing and testing a hypothesis, analyzing evidence, and interpreting results.

COURSE CONTENT

Weeks (approx.)	Topics
2	Introduction: Cyber-technology, Logic, and Argument
3	Module 1: Cyber-Privacy
3	Module 2: Cyber-Security
3	Module 3: TBA
1	Peer presentations
1	Testing and Review
(2)	Final Exam Period (Weeks 14 – 15)

Each module presents a prevalent technology, provides students with a basic understanding of its implementation, and links its application to relevant social issues. For example, a module on privacy might introduce the network communications protocol stack and physical transmission medium for a LAN; students might then learn how to use a packet-sniffer to intercept un-encrypted messages on the LAN. The class would use this understanding to consider and debate the implications of network architecture for privacy, and investigate how to safeguard it. This, in turn, might lead to further work on understanding encryption and network security.

The instructor chooses specific topics and technologies to focus on each term.
Potential topics might include, for example:

- Open-source vs. proprietary software – copyright, patents, and freedoms;
- Networks – privacy, anonymity, and security;
- Mobile Devices – innovation and disruption in the marketplace;
- File Sharing – peer-to-peer applications and intellectual property rights;
- Databases – merging, matching, data mining, and big data;
- Computer security – encryption, malware, hacking, and cyber-terrorism;
- Internet Communications – freedom of speech, spam, and censorship;
- Robotics and Automation – social disruption and the future of work;
- Crypto-currency – scalability, security, and economic disruption;
- Machine Learning – the rise of algorithms as adjudicators and advisors;
- Artificial Intelligence – the efficacy and morality of decisions made by machines;

EVALUATION PROFILE

Written Assignments	10%
Term Project and Presentation	30%
Group Tests / Quizzes	15%
Term Test	15%
Final Exam (comprehensive)	25%
Performance Evaluation	5%
TOTAL	100%

GRADING PROFILE

A+ = 90-100	B+ = 77-79	C+ = 67-69	D = 50-59
A = 85-89	B = 73-76	C = 63-66	F = 0-49
A- = 80-84	B- = 70-72	C- = 60-62	

Grading System explanation

- Written assignments are peer-evaluated. Students receive a grade for both their written work and for their evaluation of their peer's work.
- The default ***performance evaluation*** component in the evaluation profile is pro-rated to the grade earned on the remainder of the profile. In exceptional circumstances, a student's improved performance in the later part of the term may justify an elevated grade.
  The instructor has sole discretion, in such cases, to alter the performance evaluation to elevate the student's grade to better reflect their performance at the end of term.

Incomplete Grades

Grades of Incomplete "I" are assigned only in exceptional circumstances when a student requests extra time to complete their coursework. Such agreements are made only at the request of the student, who is responsible to determine from the instructor the outstanding requirements of the course.

Late Assignments
Assignments are due at the beginning of the class on the due date listed. If you anticipate handing in an assignment late, please consult with your instructor beforehand.
Late assignments will be penalized 10% if submitted late on the due date, then 20% for each successive day until a solution is posted, and will not be accepted thereafter.

Missed Exams/Quizzes/Labs
A score of zero is normally given for missed work. Make-up exams, quizzes and/or tests may be permitted, at the discretion of the instructor, and generally only in cases of medical emergency or severe personal crisis. In some cases, it may not be possible to accommodate a missed exam or quiz. Please consult with your instructor, ideally *before* the missed activity.

Attendance
Students are expected to attend and fully participate in all classes, labs, and associated activities. Students are responsible for all information given during lectures, labs, and tutorials, including exam dates and assignment deadlines, even if they were unable to attend for any reason.

English Usage
Students are expected to proofread all written work for any grammatical, spelling and stylistic errors. Instructors may deduct marks for incorrect grammar and spelling in written assignments.

Electronic Devices
Students may use electronic devices during class solely for class-related activities, such as note-taking, coding, and "just in time" research to contribute to class discussions.

Online Communication
Outside of the classroom, instructors will (if necessary) communicate with students using either their official Capilano University email or Moodle; please check both regularly. Official communication between Capilano University and students is delivered to students' Capilano University email addresses only.

UNIVERSITY OPERATIONAL DETAILS

Tools for Success
Many services are available to support student success for Capilano University students. A central navigation point for all services can be found at: http://www.capilanou.ca/services/

Capilano University Security: download the CapU Mobile Safety App

Policy Statement (S2009-06)
Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Academic Integrity, Academic Probation and other educational issues. These and other policies are available on the University website.

Academic Integrity (S2017-05)

Any instance of academic dishonesty or breach of the standards of academic integrity is serious and students will be held accountable for their actions, whether acting alone or in a group. See policy S2017-05 for more information: http://www.capilanou.ca/about/governance/policies/Policies/

Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances, are prohibited and will be handled in accordance with the Student Academic Integrity Procedures.

Academic dishonesty is any act that breaches one or more of the principles of academic integrity. Acts of academic dishonesty may include but are not limited to the following types:

Cheating: Using or providing unauthorized aids, assistance or materials while preparing or completing assessments, or when completing practical work (in clinical, practicum, or lab settings), including but not limited to the following:

- Copying or attempting to copy the work of another during an assessment;
- Communicating work to another student during an examination;
- Using unauthorized aids, notes, or electronic devices or means during an examination;
- Unauthorized possession of an assessment or answer key; and/or,
- Submitting of a substantially similar assessment by two or more students, except in the case where such submission is specifically authorized by the instructor.

Fraud: Creation or use of falsified documents.

Misuse or misrepresentation of sources: Presenting source material in such a way as to distort its original purpose or implication(s); misattributing words, ideas, etc. to someone other than the original source; misrepresenting or manipulating research findings or data; and/or suppressing aspects of findings or data in order to present conclusions in a light other than the research, taken as a whole, would support.

Plagiarism: Presenting or submitting, as one's own work, the research, words, ideas, artistic imagery, arguments, calculations, illustrations, or diagrams of another person or persons without explicit or accurate citation or credit.

Self-Plagiarism: Submitting one's own work for credit in more than one course without the permission of the instructors, or re-submitting work, in whole or in part, for which credit has already been granted without permission of the instructors.

Prohibited Conduct: The following are examples of other conduct specifically prohibited:

- Taking unauthorized possession of the work of another student (for example, intercepting and removing such work from a photocopier or printer, or collecting the graded work of another student from a stack of papers);
- Falsifying one's own and/or other students' attendance in a course;
- Impersonating or allowing the impersonation of an individual;
- Modifying a graded assessment then submitting it for re-grading; or,

- Assisting or attempting to assist another person to commit any breach of academic integrity.

Sexual Violence and Misconduct

All Members of the University Community have the right to work, teach and study in an environment that is free from all forms of sexual violence and misconduct. Policy B401 defines sexual assault as follows:

> Sexual assault is any form of sexual contact that occurs without ongoing and freely given consent, including the threat of sexual contact without consent. Sexual assault can be committed by a stranger, someone known to the survivor or an intimate partner.

Safety and security at the University are a priority and any form of sexual violence and misconduct will not be tolerated or condoned. The University expects all Students and Members of the University Community to abide by all laws and University policies, including B.401 Sexual Violence and Misconduct Policy and B.401.1 Sexual Violence and Misconduct Procedure.

Emergencies: Students are expected to familiarise themselves with the emergency policies where appropriate and the emergency procedures posted on the wall of the classroom.

DEPARTMENT OR PROGRAM OPERATIONAL DETAILS

Computer Access

Students may bring and use their own computing devices, running any modern OS (i.e., Windows, OSX, or Linux). Every effort is made to ensure that required course software can be freely downloaded and installed on student computer. However, it is the responsibility of each student to ensure their computer meets the minimum requirements of required course software, and to perform the installation and configuration of such software themselves.

Computer labs at the University will have course-required software installed and configured – students may use lab computers to complete all their course work.

Drop-in access to the University computers is available during the hours posted outside each lab, subject to availability. Please respect an instructor's directions if asked to leave the lab due to a class booking.

University policies on student conduct and use of University computer systems, available on the University website, will be strictly enforced.