IT 101 Computer Fundamentals
SYLLABUS SPRING 2019

Course Title: Computer Fundamentals
Course Number: IT 101
Course Credits: 3

Instructor: Michael Yeager
UNM Email*: pending
Office Location: n/a
Office Phone: 832-494-7477 cell
Office Hours: After class 11:30 on Fridays or by appointment

*FERPA requires that all communications between students and faculty are conducted through UNM e-mail addresses only. UNM Taos official communications will only be sent to student and faculty UNM e-mail addresses.

Class Meeting Day(s): Fridays
Class Time: 9:00-11:30AM
Class Location / Room: TSPH-127
Term / Semester: Spring 2019

Course Description:

Computer fundamentals offers a practical approach to leaning the underlying principles and concepts of computing. This course will discuss how computers work at the lowest levels and build upon that foundation to give students a foundational knowledge of how to operate, maintain and program computers. It will introduce hardware, software, networks, algorithms, data storage and manipulation, programming and problem solving.

Course Goals/Objectives:

Course goals include giving students the working knowledge of computers necessary for a career in information technology and/or computer science and software development.

Student Learning Outcomes:

- **Understanding of computer hardware:** Student will be able to identify major components of computers and describe the functions of each.
- **Understanding of binary representation of both programs and data:** Student will be able to convert numeric data to and from binary, hexadecimal, octal and decimal format and perform computational operations such as addition and subtraction. Student will also be able to convert alphanumeric data to and from binary, ASCII and UNICODE formats. Student will be able to describe how programs are represented in binary format.

- **Understanding of networking basics:** Student will be able to describe the concepts of computer networking including the internet as well as the basics of the IP protocol, computer addresses, name mapping and routing.
- **Understanding of HTML and web pages:** Students will have an understanding of the most common HTML tags and be able to create basic web pages.
- **Understanding of programming:** Students will master the fundamental concepts of computer programming including input and output, data types, variables, branching, looping, objects, classes and debugging. They will have hands-on experience in implementing common algorithms for solving problems and they will have a working knowledge of using a development environment**.**
- **Understanding of cloud computing:** Students will be able to explain and discuss what the cloud is, examples of popular cloud platforms and exhibit a working knowledge of how the cloud can be used.
- **Terminology:** Students will be able to understand and use computer-related terminology necessary to communicate effectively in computer related fields.

Textbooks/Supplies/Materials/Equipment/ Technology or Technical Requirements:

Computer Science Principles – The Foundational Concepts of Computer Science 2nd Edition by Kevin Hare

ISBN# 978-0-692-10671-6
ISBN-13: 979-0692106715
ISBN-10: 0692106715

https://www.amazon.com/Computer-Science-Principles-Foundational-Concepts/dp/0692106715/ref=sr_1_1?ie=UTF8&qid=1547658310&sr=8-1&keywords=9780692106716

Students are encouraged to bring a personal laptop (Mac or Windows) with the latest editions of Visual Studio Code (free from Microsoft) and the Chrome browser (free from Google) installed.
VS Code can be downloaded from https://code.visualstudio.com/download
Google Chrome can be downloaded from https://www.google.com/chrome/

Course Requirements:

Students will be graded 50% on assignments, 30% on presentations and 20% on exams.

Student Attendance Policy:

Students will not be graded on attendance, however students who miss more than 50% of classes will be dropped from the course per Faculty Handbook Policy D145.

Grading:

Indicate how a final course grade (including credit/no credit) will be assigned, calculated, or otherwise determined. See Appendix 3.

Course Schedule:

Friday Jan 18 – First day of class.
Syllabus review. Computer basics: hardware, software, operating systems
Friday Jan 25 – Class #2
Binary, Hex, Octal, Decimal, ASCII, UNICODE, Programs
Friday Feb 1 – No Class.
Assignments will be given via email and web site
Friday Feb 8 – Class #3
Networks, protocols, addressing, naming, routing, internet
Friday Feb 15 – Class #4
Data, compression, storage, indexing
Friday Feb 22 – Class #5
Security, encryption, firewalls
Friday Mar 1 – Class #6
HTML, HTTP, HTTPS, CSS web pages
Friday Mar 8 – Midterm Exam and Presentations
Friday Mar 15 – Spring Break
Friday Mar 22 – Class #7
Introduction to programming with JavaScript
Friday Mar 29 – Class #8
Advanced JavaScript: arrays, objects, events
Friday Apr 5 – Class #9
Introduction to algorithms, Euler
Friday Apr 12 – Class #10
Introduction to services, NodeJS
Friday Apr 19 – Class #11
Group project: building a working web site
Friday Apr 26 – Class #12
Introduction to the cloud & introduction to other programming languages
Friday May 3 - Presentations
Friday May 10 – Final Exam

Disclaimer:
The instructor reserves the right to alter this syllabus to better meet the learning needs of the students. Minor changes will be announced in class, major ones provided in writing.

Accommodation Statement:

In accordance with UNM Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he or she are not legally permitted to inquire. Students who require assistance in emergency evacuations should contact the instructor as to the most appropriate

procedures to follow. Contact Accessibility Services, at the Center for Academic Success and Achievement (CASA), to coordinate accommodations and services CASA is located on the Klauer Campus, TSPH West, and can be reached at 575.737.3695.

Title IX Statement:

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees" by the Department of Education (see pg. 15 - http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: https://policy.unm.edu/university-policies/2000/2740.html

Academic Integrity Statement:

The policy of the University of New Mexico addresses the fact that academic honesty is one of the basic steps toward personal and academic development. Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters.

At UNM, academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records. University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in coursework may receive a reduced or failing grade for the work in question and/or for the course.

The University's full statement on academic dishonesty and the consequences for failure to comply is available online at http://pathfinder.unm.edu/campus-policies/academic-dishonesty.html.

Dropping the course: Students should not assume that nonattendance results in being dropped from the class. It is the student's responsibility to initiate drops or complete withdrawals utilizing http://registrar.unm.edu/ or LoboWeb at http://my.unm.edu/ .

UNM Taos Library:
All students are encouraged to utilize library services as an additional resource for this course. Here is the link to the UNM-Taos Library : http://taos.unm.edu/library/

CASA (Center for Academic Success and Achievement):

All students are encouraged to utilize the CASA tutoring services offered free through UNM-Taos: http://taos.unm.edu/home/casa/

Due Process/Student Grievance Procedure:
If a student has a problem in class that cannot be handled by talking directly to the instructor, which would be the first step, the appropriate person to contact is the Department Chair in the program you are enrolled in. A list of Department Chairs can be found in the UNM Taos course schedule or online at http://taos.unm.edu/home/academics-2/. If the issue/concern has not been resolved after this, please contact the appropriate Area Coordinator (at the above link). The Dean of Instruction is the last step if all matters remain unresolved.

Course Calendar

Date	Topic	Assignment
1/18	Syllabus review. Computer basics: hardware, software, operating systems	
1/25	Binary, Hex, Octal, Decimal, ASCII, UNICODE, Programs	
2/1	No Class	Assignments will be given via email and web site
2/8	Networks, protocols, addressing, naming, routing, internet	
2/15	Data, compression, storage, indexing	
2/22	Security, encryption, firewalls	
3/1	HTML, HTTP, HTTPS, CSS web pages	
3/8	Midterm Exam and Presentations	
3/15	SPRING BREAK	
3/22	Introduction to programming with JavaScript	
3/29	Advanced JavaScript: arrays, objects, events	

4/5	Introduction to algorithms, Euler	
4/12	Introduction to services, NodeJS	
4/19	Group project: building a working web site	
4/26	Introduction to the cloud & introduction to other programming languages	
5/3	Presentations	
5/10	Final Exam	