

CS105: Explore the World with Computing (CT), Spring 2018
Weisberg Division of Computer Science
Marshall University

Course Information:

- Instructor: Dr. Cong Pu (Ph.D., Assistant Professor)
- Office: Weisberg Applied Engineering Complex (WAEC) 3109
- Phone: (304) 696-6204
- Email: puc@marshall.edu
- Course meetings: Mon/Wed, 1:00 p.m. – 2:15 p.m., WAEC 1101
- Tentative office hours: Mon, 2:30 p.m. – 5:00 p.m.
Tue, 11:00 a.m. – 12:00 p.m., 3:30 p.m. – 5:00 p.m.
Wed, 2:30 p.m. – 5:00 p.m.
Thu, 11:00 a.m. – 12:00 p.m., 3:30 p.m. – 5:00 p.m.
Or by appointment.
- Course web page: (MUOnline) <http://www.marshall.edu/muonline/>. It is important to visit MUOnline regularly for up-to-date course information.

Course Description:

- Central principles and big ideas of computing: problem-solving, computational and critical thinking, abstraction, creativity, reasoning, data, algorithms, recursion, visualization, and limits of computation. Solve real-world problems with computing. (From Catalog)
- This course introduces the concept of computing to students with no prior computer science experience. Students will learn principles of computing, computational thinking to solve real-world problems, and the impact of computing to the world.
- Topics include computer hardware, software, networks, Internet, computer security and privacy, web and mobile, basic programming, Internet-of-Things, big data, etc.

Prerequisites:

- None

Course Student Learning Outcomes: The table below shows the following relationships: How each student learning outcomes will be practiced and accessed in the course.

Course Student Learning Outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
Apply Integrative Thinking to make connections and transfer skills and learn among varied disciplines, domains of thinking, experiences, and situations. (a, g) <ul style="list-style-type: none">• Use basic computing terminology and concepts in other major or field of study.• Describe the basic computing techniques in our daily life.	Lecture Examples Exercise	Assignment Review Quiz Exam
Demonstrate Communication Fluency including cohesive oral, written, and visual communications skills to present research to specific audiences. (b, d, f) <ul style="list-style-type: none">• Record the process of solving the problem so that others can understand the student's work.	Lecture Examples Exercise	Assignment Review Quiz Exam

<ul style="list-style-type: none"> Present the idea and work in front of class, and answer others' questions. 		
<p>Apply Quantitative Thinking skills to analyze problems, develop and explore risky or controversial ideas, and synthesize ideas/expertise to generate innovations. (b, c, i)</p> <ul style="list-style-type: none"> Analyze the current computing technique, identify the strengths and potential weakness, propose a novel and innovative solution. 	Lecture Examples Exercise	Assignment Review Quiz Exam
<p>Apply Inquiry Based Thinking to formulate focused questions and hypotheses, evaluate existing knowledge, collect and analyze data, and draw justifiable conclusions. (b, g)</p> <ul style="list-style-type: none"> Analyze how computing impact our daily life. 	Lecture Examples Exercise	Assignment Review Quiz Exam
<p>Demonstrate Information Literacy by revising their search strategies and employ appropriate research tools, integrate relevant information from reliable sources, question and evaluate the complexity of the information environment, and use information in an ethical manner. (b, e, i)</p> <ul style="list-style-type: none"> Demonstrate proficiency and capability in searching and collecting existing techniques, evaluating the quality and characteristics of techniques, and using the optimal technique to solve the problem. 	Lecture Examples Exercise	Assignment Review Quiz Exam
<p>Use Metacognitive Thinking to evaluate the effectiveness of a project plan or strategy to determine the degree of their improvement in knowledge and skills. (c)</p> <ul style="list-style-type: none"> Discuss the learned computing knowledge and identify what the students have learned through classroom discussions, and determine what they need to learn more deeply. 	Lecture Examples Exercise	Assignment Review Quiz Project Exam

ABET a-i: <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-computing-programs-2017-2018/#outcomes>

Preferred Communication Method and Expected Response Time:

- You can always see me during office hours. No appointment is required.
- You can generally expect an email response within 12 hours. If you don't get a response within 12 hours, please forward your previous email to me to remind me.
- You can generally expect the feedback on assignments, and grades in one week after submission. If you don't receive the feedback on assignments, and grades in two weeks, please send an email to me.

Required Textbooks, Additional Reading, and Other Materials:

- A list of reference books will be used. For more information, please refer to the following resources:
 - G.Michael Schneider, Judith Gersting. Invitation to Computer Science. Course Technology. 7 Edition. ISBN-10: 1305075773. ISBN-13: 978-1305075771.
 - Greg Anderson, David Ferro, Robert Hilton. Connecting with Computer Science. Course Technology. 2 Edition. ISBN-10: 1439080356. ISBN-13: 978-1439080351.
- Important concepts/materials will be included in the lecture notes from various sources, and posted on MUOnline.

Course Requirements and Grading Policy:

- 1st Midterm Exam: 15%, Feb 12 (Monday), 1:00 p.m. - 2:15 p.m., WAEC 1101**
- 2nd Midterm Exam: 15%, Mar 14 (Wednesday), 1:00 p.m. - 2:15 p.m., WAEC 1101**

- **Final Exam: 15%, May 04 (Friday), 12:45 p.m. – 2:45 p.m., WAEC 1101**
 - Closed book and closed notes. You are required to bring your student ID for the exams.
 - There will be **NO** make-up for missing exam. Only university excused absences with appropriate **DOCUMENTATION** will be accepted for make-up exam.
 - If you want to take a conflict exam, you must talk to instructor and provide a valid document at least two weeks before the scheduled exam. The conflict exam must be taken within two days after the scheduled exam.
- **Review Quiz: 15%**
 - Review quiz will **NOT** be announced in advance, so attendance is highly required.
 - There will be **NO** make-up for missing review quiz. Only university excused absences with appropriate **DOCUMENTATION** will be accepted for make-up review quiz.
- **Assignments: 30%**
 - Assignment should be **PRINTED** and **SUBMITTED** at the beginning of class on due date. **NO** late submission will be accepted.
- **Project: 10%**
 - Project should be **SUBMITTED** on Blackboard before due date. **NO** late submission will be accepted.
- **Plagiarism Detection:**
 - Plagiarism or cheating will not be tolerated, and will result in immediate dismissal (F grade).
- **Grade Scale:**
 - A (100 - 90), B (89 - 80), C (79 - 70), D (69 - 60), and F (59 - 0)

Attendance and Classroom Policy:

- Students are expected to attend punctually all class meetings, from the beginning of the semester until the end of the semester. If a student misses a class without university excused absence, the student should not expect individualized instruction what was missed. This will be effective from the beginning of semester.
- Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.
- Inappropriate behaviors include but not limited to:
 - Late for class
 - Sleeping during class
 - Leaving without proper excuse
 - Web surfing, chatting, or gaming on electric devices

University Policy and Ethical Conduct:

- By enrolling this course, you agree to the University Policy and Ethical Conduct listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies". Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/policies/> Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/

Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/
Affirmative Action/ Sexual Harassment.

Policy for Students with Disabilities:

- Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304-696-2271, to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 117, phone 304-696-2271.

Course Schedule: Topics and/or dates may be changed during the semester at the instructor's discretion because of scheduling issues, developments in the discipline, or other contingencies.

- Jan 08: Welcome & Introduction to Computing
- Jan 10: Introduction to Computing
- **Jan 15: Martin Luther King, Jr. Holiday**
- Jan 17: Algorithm in Computer Science
- Jan 22: Algorithm in Computer Science
- Jan 24: Efficiency of Algorithm
- Jan 29: Numbering System and Data Representation
- Jan 31: Numbering System and Data Representation
- Feb 05: Computer Systems Organization
- Feb 07: Computer Systems Organization
- **Feb 12: 1st Midterm Exam, 1:00 p.m. – 2:15 p.m., WAEC 1101**
- Feb 14: Virtual Machine
- Feb 19: Virtual Machine
- Feb 21: Computer Networks
- Feb 26: Computer Networks
- Feb 28: Internet and Computer forensic
- Mar 05: Internet and Computer forensic
- Mar 07: Computing Security and Ethics
- Mar 12: Computing Security and Ethics
- **Mar 14: 2nd Midterm Exam, 1:00 p.m. – 2:15 p.m., WAEC 1101**
- **Mar 19: Spring Break Holiday**
- **Mar 21: Spring Break Holiday**
- Mar 26: Programming in Scratch
- Mar 28: Programming in Scratch & Programming in MIT App Inventor
- Apr 02: Programming in MIT App Inventor
- Apr 04: Geographic Information System (GIS)
- Apr 09: GIS & Human-Computer Interface and Web Development
- Apr 11: Human-Computer Interface and Web Development
- Apr 16: Data Mining and Big Data
- Apr 18: Database Fundamentals and Excel
- Apr 23: Wireless Network and Mobile Computing ("Dead Week")
- Apr 25: Internet-of-Things and Its Applications ("Dead Week")
- **May 04: Final Exam, 12:45 p.m. – 2:45 p.m., WAEC 1101**