IT 104: Introduction to Computing

Spring 2020 Syllabus

<table>
<thead>
<tr>
<th>Professor</th>
<th>Kent Zimmerman</th>
</tr>
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<tbody>
<tr>
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<td>032-626-5110</td>
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<tr>
<td>Office Hours</td>
<td>M: 1515 – 1615</td>
</tr>
<tr>
<td>Office Location</td>
<td>Mason Korea building, 6th floor, 674</td>
</tr>
<tr>
<td>Class Hours</td>
<td>M (Lecture), W (Lab); 1400 – 1515</td>
</tr>
<tr>
<td>Class Location</td>
<td>TBD (Lecture), G401 (Lab)</td>
</tr>
</tbody>
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Course Description

Introduction to Computing (3:1:2). This course, using both lecture and laboratory practice, introduces students to basic computer concepts in hardware, software, networking, computer security, programming, database, e-commerce, decision support systems, and current developments in 3-D printing, virtualization, and Siri-like systems. Additional lectures examine social, legal, ethical issues including privacy, intellectual property, health concerns, green computing, and accessibility. Students learn techniques to search, evaluate, validate, and cite information found online. Hands-on lab includes spreadsheets, databases, presentation, HTML 5, CSS, cybersecurity, blogs, wiki, and mobile app development.

Prerequisites

Knowledge of high school algebra.

Mason Core Course

Information technology and computing can significantly augment humans’ ability to produce, consume, process, and communicate information. Thus, students need to understand ways to use such technology to enhance their lives, careers, and society, while being mindful of challenges such as security, source reliability, automation, and
ethical implications. These factors have made it essential for students to understand how to effectively navigate the evolving technological landscape. IT courses offered in the majors may focus on disciplinary applications and concerns of information technology.

Mason Core IT courses meet the following learning outcomes:

1. Students will understand the principles of information storage, exchange, security, and privacy and be aware of related ethical issues.
2. Students will become critical consumers of digital information; they will be capable of selecting and evaluating appropriate, relevant, and trustworthy sources of information.
3. Students can use appropriate information and computing technologies to organize and analyze information and use it to guide decision-making.
4. Students will be able to choose and apply appropriate algorithmic methods to solve a problem.

Objectives
After successful completion of the course, the students will:

1. Understand basic functions of computer hardware and software components including operating system functions;
2. Identify various networks (LAN, WAN, intranet), topologies (ring, bus, star), protocols (TCP/IP, SMTP, POP & IMAP, HTTP & HTTPS, DNS), media types (wire pair, coaxial cable, fiber optics, microwave, radio frequency, infra-red), and network hardware (router, hub, gateway);
3. Know how to use search techniques (inclusion, exclusion, wildcards, phrase, Boolean search), evaluate the information found on Web pages (chat rooms, newsgroups, RSS, podcasting sites, Wikipedia, blogs), and cite electronic and printed references;
4. Understand computer viruses, biometric devices, encryption technique, digital signature, email filtering, firewall, and precautions on the Web;
5. Understand ethical issues regarding copyright, software licenses, information privacy, intellectual property, content filtering, Spam, and laws enacted with regards to SPAM, children’s protection on Web, electronic communication, and electronic theft;
6. Understand IT’s impact on society (health and environment);
7. Design and create web pages using HTML5;
8. Know data visualization techniques;
9. Learn to write small programs using the Java programming language;
10. Use different application programs like spreadsheet and database management systems; and
11. Understand the fundamentals of system analysis, life cycle of a program development and programming languages, artificial intelligence, and e-commerce.

Credit by Examination

Students who think they already know the material in IT 104 should read the information on Credit by Examination posted on the http://ist.gmu.edu/students/current-students/course-credit-waiver-options/ web site.

Textbooks

There are two required materials for the course, both from the Kendall Hunt publishing company. Used books do not contain a required electronic code.

If you have an issue purchasing anything with your Korean credit or debit card, or any potential international shipping questions, contact the Kendall Hunt customer service team and they will likely be able to assist you.

1. *Introduction to Computer Information Systems*, 4th Edition
   - ISBN: 9781524991821
   - Author: Steinberg
   - Available at: https://he.kendallhunt.com/product/introduction-computer-information-systems-
   - Price: USD 84

   - ISBN: 9781465280473
   - Author: Sanghera
   - Available at: https://he.kendallhunt.com/product/fundamentals-computing-ecommerce
   - Price: USD 74

Grading

Grades will be awarded in accordance with the GMU Grading System for undergraduate students. See https://catalog.gmu.edu/policies/academic/grading/#text under Grading System for more information.

The grading scale for this course is:
97 – 100% A+ Passing
93 – 96% A Passing
90 – 92% A- Passing
87 – 89% B+ Passing
83 – 86% B Passing
80 – 82% B- Passing
77 – 79% C+ Passing
73 – 76% C Passing
70 – 72% C- Passing*
60 – 69% D Passing*
0 – 59% F Failing

* Grades of "C-" and "D" are considered passing grades for undergraduate courses. However, a minimum grade of "C" is required in the BSIT program for any course that is a prerequisite for one or more other courses. This course is a prerequisite for several courses in BSIT program – see https://catalog.gmu.edu/colleges-schools/engineering/information-sciences-technology/information-technology-bs/#admissionspoliciestext for more information on those courses.

Raw scores may be adjusted by the instructor to calculate final grades.

The instructor reserves the right to adjust a student’s final grade up one tier (e.g., D → C-) for excellent class performance, including, but not limited to, perfect attendance, consistent high course effort, or extremely demonstrable improvements in work ethic. This bonus is available to all students, but is rarely awarded and is given at the sole discretion of the instructor.

**Grading Components**

Final grades will be determined based on the following components:
<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class Exercises</td>
<td>50</td>
<td>5%</td>
</tr>
<tr>
<td>Project Part I (Research Paper)</td>
<td>150</td>
<td>15%</td>
</tr>
<tr>
<td>Project Part II (Web site)</td>
<td>150</td>
<td>15%</td>
</tr>
<tr>
<td>Discussion Posts</td>
<td>50</td>
<td>5%</td>
</tr>
<tr>
<td>Lab Exercises and Homework Assignments</td>
<td>150</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Practice Test (conducted in lab)</td>
<td>25</td>
<td>2.5%</td>
</tr>
<tr>
<td>Final Practice Test (conducted in lab)</td>
<td>25</td>
<td>2.5%</td>
</tr>
<tr>
<td>Midterm Exam (conducted in lab)</td>
<td>200</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam (conducted in lab)</td>
<td>200</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td>1000</td>
<td>100%</td>
</tr>
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Students are responsible for checking the currency of their grade books. Grade discrepancies must be brought to instructor’s attention within one week of assignment submission, or within 24 hours of exam submission for exams.

**In-Class Exercises**
There will be five in-class exercises, which will likely be in the form of pop-quizzes. The quizzes will be composed of exam-level questions in the form of multiple choice, fill-in-the-blank, short answer, or essay. No makeups will be offered for missed quizzes.

**Course Discussions**
There will be five required course discussions throughout the semester. Each discussion is worth 10 points. You are expected to put up your original post first and then respond to two other posts with a constructive feedback.

**Course Project, Parts I and II**
Please see the project pages in the lecture Blackboard folder for details as they become available throughout the course. More on the projects during class.

**Midterm and Final Practice Tests**
Midterm and final practice tests are conducted during lab class. Please see the lab schedule contained in the lab syllabus. **Attendance in both practice tests is mandatory.**
Exams
Every exam is “closed book.” Exams are conducted in the lab class on specified dates. You must bring your valid GMU ID to lab on the scheduled exam dates. No makeups for missed exams for any reason.

Final grades will be posted to PatriotWeb, which is the only vehicle for students to obtain those grades. A student with a "hold" on his or her PatriotWeb account will be unable to access final grades until the hold has been removed by the appropriate department.

Important Dates
The Spring 2020 semester calendar is available on the Mason Korea web site. Please view this website for important dates and holidays – https://masonkorea.gmu.edu/academic-calendars

Religious Holidays
A list of religious holidays is available on the University Life Calendar page. Any student whose religious observance conflicts with a scheduled course activity must contact the instructor at least two weeks in advance of the conflict date in order to make alternative arrangements.

Attendance Policy
Students are expected to attend each class, to complete any required preparatory work, and to participate actively in lectures, discussions and exercises. As members of the academic community, all students are expected to contribute regardless of their proficiency with the subject matter.

Students are expected to make prior arrangements with the instructor if they know in advance that they will miss any class and to consult with the instructor as soon as possible if they miss any class without prior notice. Any student who expects to miss more than two class sessions is strongly advised to drop the course and take it in a later semester when he or she can attend every class.

Departmental policy requires students to take exams at the scheduled time and place, unless there are truly compelling circumstances supported by appropriate documentation. Except in such circumstances, failure to attend a scheduled exam will result in a score of zero (0) for that exam, in accordance with AP.3.10 Final Exams. Students should not make travel plans or other discretionary arrangements that conflict with scheduled classes and/or exams. If the University is closed due to weather or other unforeseen conditions, final exams may be rescheduled – students are strongly advised to not make plans that would prevent them from attending exams that may be rescheduled during the entire exam period.
**Classroom Conduct**

Students are expected to conduct themselves in a manner that is conducive to learning, as directed by the instructor. Any student who negatively impacts the opportunity for other students to learn will be warned. If disruptive behavior continues, the student will be asked to leave the classroom and referred to the Office of Student Conduct.

**Communications**

George Mason University’s e-mail system is the preferred method of communication.

Students must use their MasonLIVE email account to receive important University information, including messages related to this class. Federal privacy law and George Mason University policy requires that any communication with a student related in any way to a student’s status be conducted using secure George Mason University systems.

**Privacy**

Instructors respect and protect the privacy of information related to individual students. Instructors will take every possible measure to protect the privacy of each student’s submissions, scores and grades.

**Honor Code**

It is expected that students adhere to the George Mason University Honor Code as it relates to integrity regarding coursework and grades. The Honor Code reads as follows: "To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this Honor Code: Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work." More information about the Honor Code, including definitions of cheating, lying, and plagiarism, can be found on the Committee of Academic Integrity’s website at https://masonkorea.gmu.edu/resources-and-services/cai/overview.

For this course, the following requirements are specified:

1. All assessable work is to be prepared by the individual student, unless the Instructor explicitly directs otherwise.
2. All work must be newly created by the individual student for this course for this semester. Any usage of work developed for another course, or for this course in a prior semester, is strictly prohibited without prior approval from the instructor.

3. Students may seek assistance with assigned work (and are encouraged to do so if they feel the need), provided the directions for the assigned work do not prohibit such assistance and assistance is acknowledged in the submitted work, clearly identifying the person/s giving assistance and the nature of the assistance given.

**Disability Accommodations**

If you are a student with a disability and you need an academic accommodation, please contact the instructor as soon as you can. Accommodations for disabled students must be made in advance—we cannot assist students retroactively, and at least one week’s notice is required for special accommodations related to exams. Any student who needs accommodation should contact the instructor during the first week of the semester so the sufficient time is allowed to make arrangements.

**Available Resources**

**Academic Resource Center**: [https://masonkorea.gmu.edu/resources-and-services/academic-resource-center](https://masonkorea.gmu.edu/resources-and-services/academic-resource-center)

**IT 104 InfoGuide**: [https://infoguides.gmu.edu/it104](https://infoguides.gmu.edu/it104)
## Course Schedule

### Lecture Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Assignment*</th>
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| 2.24  | • Course Introduction  
• Project Part I: Research Paper Details  
• Information Systems  
• Library and Internet Research  
• World Wide Web | • Research Paper document posted on Blackboard ("BB")  
• Chapter 1  
• InfoGuides |
| 3.2   | Hardware                                                              | Chapter 3                                                |
| 3.9   | Software                                                              | Chapter 4                                                |
| 3.16  | • Internet  
• Data Comm. and Networking | • Chapter 2  
• Chapter 5                                                |
| 3.23  | • Project I: Research Paper due!  
• System Analysis  
• Midterm Exam Review | • Chapter 6  
• Review document posted on BB |
| 3.30  | No Lecture!                                                           |                                                          |
| 4.6   | • Project Part 2: Website Details  
• HTML 5   | • Website document posted on BB  
• Chapter 9                                                |
| 4.13  | CSS and JavaScript                                                   | Chapter 10                                               |
| 4.20  | Computer Programming                                                 | Chapter 7                                                |
| 4.27  | Database and SQL                                                     | Chapter 8                                                |
| 5.11  | • Project 2: Website due!  
• E-commerce  
• Mobile and Cloud Computing | • Chapter II  
• Chapter 12                                               |
| 5.18  | Security, Ethics, and Privacy                                        | Chapter 13                                               |
| 5.25  | • DSS, AI, Data Mining, and Data Management  
• Impact of Computing on Society | • Chapter 14  
• Chapter 15                                               |
| 6.1   | • Future of Computing: SIRI Like Systems, 3D Printing, Virtualization | • Chapter 16  
• Review document posted on Blackboard |

*The assigned chapter shown for each lecture is recommended to be completed prior to the respective lecture.*

### Lab Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Topic</th>
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| 2.26  | • Course Introduction  
• Library Research  
• GRTEP and Google Accounts  
• Information Literacy Activity |
| 3.4   | • Computer Assembly Activity  
• Information Literacy Quiz |
| 3.11  | • Excel Case Study Activity  
• Hardware Quiz |
| 3.18  | • Wireshark Networking Activity  
• Excel Quiz |
| 3.25  | Midterm Practice Exam Activity |
| 4.1   | Midterm Exam!                                                            |
| 4.8   | HTML5 Case Study I Activity |
| 4.22  | HTML5 Case Study II Activity |
| 4.29  | • Python Activity  
• HTML Quiz |
| 5.6   | • Access Case Study Activity  
• Python Quiz |
| 5.13  | Mobile Application Activity |
| 5.20  | Cyber Security Activity |
| 5.27  | Data Visualization Activity |
| 6.3   | Final Practice Exam Activity |
| TBD   | Final Exam!                                                              |