COURSE Outline

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IST 102</td>
<td>Computer Concepts with Programming</td>
<td>3</td>
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</tbody>
</table>

**Hours:**
- Lecture/Lab/Other

**Co- or Pre-requisite:**
- None

**Revised:**
- Spring/2019

**Catalog description:**
A course designed to help students become computer literate. Topics include understanding the fundamentals of computer nomenclature, particularly with respect to personal computer hardware and software and the World Wide Web. The course recognizes the World Wide Web as a repository of the latest information and an integrated learning tool. The course is designed to develop an in-depth understanding of why computers are essential components in the business world and society, with a focus on the computer as a valuable productivity tool. The personal computer's position is recognized as the backbone of the computer industry with emphasis of its use as stand-alone and networked device. The text presents strategies for purchasing, installing, and maintaining a personal computer system; and assists students in planning a career in the computer field. Lab includes exposure to Windows as well as basic structures of programming. The students learn how to implement structures of programming by solving business related problems with Java programming language.

**Required texts/other materials:**
1. **Technology In Action Complete, Global Edition, 15/e**  
   Evans, Martin & Poatsy  

2. **Starting Out with Java: From Control Structures through Objects plus MyProgrammingLab with Pearson eText -- Access Card Package, 7/e**  
   Gaddis  

3. Advisable to get JAVA/IST 102 kit from the MCCC Bookstore.

4. Flash drive

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computer nomenclature, particularly with respect to personal computer hardware and software and the World Wide Web. The course recognizes the World Wide Web as a repository of the latest information and an integrated learning tool. The course is designed to develop an in-depth understanding of why computers are essential components in the business world and society, with a focus on the computer as a valuable productivity tool. The personal computer's position is recognized as the backbone of the computer industry with emphasis of its use as stand-alone and networked device. The text presents strategies for purchasing, installing, and maintaining a personal computer system; and assists students in planning a career in the computer field. Lab includes exposure to Windows as well as basic structures of programming. The students learn how to implement structures of programming by solving business related problems with Java programming language.

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<thead>
<tr>
<th>Week</th>
<th>Learning Objectives</th>
<th>Activities</th>
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<tbody>
<tr>
<td>1.</td>
<td>Introductions</td>
<td>Lab 1 - Internet Explorer,</td>
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<tr>
<td>2.</td>
<td>• Explain how technology impacts the way we think, connect and consume [CG 4]</td>
<td>Chapter 1 - Using Technology to Change the World</td>
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<tr>
<td></td>
<td>• Discuss how technology improves life at home and in career [CG 2, 3, 4&amp;5]</td>
<td>Lab 2 – Compiling and running a Java program.</td>
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<td>• Explain parts of computer and digital components [CG3, 4]</td>
<td>Ch. 1 Test</td>
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<tr>
<td></td>
<td>• Discuss Input devices, output devices, processing, storage and connectivity[CG 2, 3, 4&amp;5]</td>
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<td></td>
<td>• Explain processing and memory on motherboard[CG3, 4]</td>
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<td></td>
<td>• Discuss storing data and information, Connecting Peripherals to the Computer and power controls[CG3, 4]</td>
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<td>• Explain how to set All Up[CG3, 4]</td>
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<tr>
<td>4</td>
<td>• Describe the differences between application and system software [CG3, 4].</td>
<td>Chapter 2: Application Software: Programs that let you Work and Play.</td>
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<tr>
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<td>• List different types of apps and software you can use on your computing devices [CG 2, 3, 4&amp;5]</td>
<td>Lab 2:</td>
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<td>• List the types of applications included in productivity software suites, and describe their uses and features [CG 2, 3, 4&amp;5]</td>
<td>Test 2</td>
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<td>• List software that individuals use to manage their finances [CG 2, 3, 4&amp;5].</td>
<td>Microsoft Excel Skill Test</td>
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<tr>
<td></td>
<td>• List common types of software that large and small businesses use [CG 2, 3, 4&amp;5]</td>
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</table>
| 4. | • Understanding Digital Components [CG3, 4]  
• Understanding Your Computer [CG3, 4]  
• Discuss Input Devices and Setting It All Up [CG 2, 3, 4&5]  
• Explain Processing, Storage, and Connectivity [CG3, 4]  
• Discuss Processing and Memory on the Motherboard[CG 2, 3, 4&5]  
• Explain Storing Data and Information[CG3, 4]  
• Explain Connecting Peripherals to the Computer[CG3, 4]  
• Power Controls and Setting It All Up[CG 2, 3, 4&5]  
Lab 3 – Decision Structures  
**Ch. 3 Test** |
|---|---|
| 5. | • Explain Networking: Connecting Computing Devices[CG 2, 3, 4&5]  
• Explain How Networks Function[CG3, 4]  
• Explain Networking Fundamentals[CG3, 4]  
• Explain Network Architectures[CG3, 4]  
• Discuss Ethernet Protocols[CG 2, 3, 4&5]  
• Discuss Network Components and Transmission Media[CG 2, 3, 4&5]  
• Explain Basic Network Hardware and Network Software[CG 2, 3, 4&5]  
• Explain Home Network, Installing and Configuring Home Networks[CG 2, 3, 4&5]  
• List and define Network-Attached Storage Devices[CG 2, 3, 4&5]  
• Discuss TRENDS in IT: Where Should You Store Your Files? The Cloud Is Calling! [CG 2, 3, 4&5]  
Information Technology Ethics  
**Ch. 4 Test.**  
**Lab. 4 Loops and Files** |
| 6 | • Discuss Mobile Devices and Digital Convergence [CG 2, 3, 4&5]  
• Explain Telephony: Smartphones and Beyond[CG3, 4]  
• Discuss Tablets, Netbooks, and Ultrabooks [CG 2, 3, 4&5]  
• Explain TRENDS in IT: NFC Chips: Do it will work? [CG 2, 3, 4&5] | Chapter 5 - Digital Devices and Media: Managing a Digital Lifestyle  
Lab. 5: Methods  
Test 5 |
|---|---|---|
| 7 | • List and explain major threats to Digital Assets [CG 2, 3, 4&5]  
• Discuss Cybercrime and Identity Theft; Computer Viruses[CG 2, 3, 4&5]  
• Explain how to prevent Virus Infection and Hackers[CG 4]  
• Explain how to restricting access to Digital Assets [CG 4]  
• Discuss how to Protect Digital Property, manage Online Annoyances [[CG 2, 3, 4&5]  
• Explain how to protecting Physical Computing Assets [CG 2, 3, 4&5]  
Lab 6 – A First Look at Classes  
Ch. 6 Test. |
| 9. | **Purdue OWL website review**  
http://owl.english.purdue.edu/owl/  
Assign Research Project[CG 2, 3, 4&5] | MID-TERM EXAM 1  
(ch 1-5) |
| 10 11 | • Define Software Programming [CG3, 4]  
• Explain the importance of programming [CG 4]  
• Explain The Life Cycle of an Information System [CG 4]  
• Explain The Life Cycle of a program [CG 4]  
• Explore programming languages [CG3, 4] | Chapter 7 - Behind the Scenes: Software Programming.  
Lab 7 – Array and Array List Class  
Ch. 7 Test. |
<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
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| 12   | • Describe Database Basics and Database Building Blocks [CG 4]  
      • Explain Database Types and Database Functions [CG 2, 3, 4&5]  
      • Discuss Data Warehousing and Storage, Business Intelligent System and data Mining [CG 2, 3, 4&5]  
      • Explain Ethics in IT [CG3, 4]  
      Chapter 8 - Behind the Scenes: Databases and Information Systems  
      Research project due  
      Microsoft Access Project For IT  
      Ch. 8 Test. |
| 13   | • List different servers and their uses[CG3, 4]  
      • Discuss different Network Topologies and Transmission Media [CG 4]  
      • Explain how to set up Business Networks, network adapters and network navigation devices [CG 2, 3, 4&5], 4  
      • Discuss Network Operating Systems and Client/Server Network Security [CG 2, 3, 4&5]  
      Chapter 9 - Behind the Scenes: Networking and Security in the Business World  
      Collect Research project.  
      Lab 9 Text Processing and More Wrapper Classes  
      Ch. 9 Test. |
|      | • Enormous collection of on/off switches  
      • Combined to perform addition, [CG3, 4]  
      • subtraction, and move data around [CG 2, 3, 4&5]  
      Chapter 10  
      Technology In Focus: Under the Hood, How Internet Works  
      Lab 10: Accessing Array elements in a loop. and Inheritance  
      Test Under the Hood |
| 13.  | • DiscussTechnology in Focus: Careers[CG 2, 3, 4&5]  
      Under the Hood: Careers in IT  
      Test in Careers In IT. |
| 14.  | • Final Projects Due  
      Presentation of final project |
| 15.  | • Course evaluation  
      FINAL EXAM |