COURSE: IST-255-T01, Networking III, WEB

INSTRUCTOR:

COURSE DESCRIPTION:
This course provides a comprehensive, theoretical, and practical approach to learning the
technologies and protocols needed to design and implement a converged switched network.
Students learn about the hierarchical network design model and how to select devices for each
layer. The course explains how to configure a switch for basic functionality and how to implement
Virtual LANs, VTP, Inter-VLAN routing, and Spanning Tree Protocol in a converged network. In
conjunction with the Cisco Networking Academy, students also develop the knowledge and skills
necessary to implement a WWLAN in a small to medium network. Students must have a personal
computer and Internet access to complete online assignments and exams. Class also meets at least
one Saturday per session per the instructor's discretion. Laboratory fee required. Prerequisite: IST
156

TEXTBOOK: No textbook required

STUDENT LEARNING OUTCOMES:
• Design and implement a switched network using VLANs, VLAN Trunking Protocol (VTP),
  Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Protocol (PVSTP), and
  802.1q trunking.
• Configure a router to support inter VLAN routing using 802.1q trunking through sub
  interfaces.
• Provide reliability and redundancy through routing protocols, load balancing, and link
  aggregation.
• Design and implement a small standards-based wireless network including appropriate
  security settings.

MINIMUM CLOCK HOURS REQUIRED FOR THIS COURSE
To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock
hours (45 fifty-minute “academic” hours) of coursework per semester. Those hours of coursework
may be completed through a combination of hours within the classroom and hours outside the
classroom. Certain courses may require more than the 37.5 minimum hours of coursework per
credit.
For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework.

<table>
<thead>
<tr>
<th>Activity</th>
<th>DIRECT Faculty Instruction In-class</th>
<th>Student Work Out of Classroom</th>
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<tbody>
<tr>
<td>In-class “lecture”</td>
<td>36 h required</td>
<td>114 h required</td>
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<tr>
<td>Reading chapters</td>
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<td>38 h</td>
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<tr>
<td>Practice quizzes</td>
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<td>6 h</td>
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<tr>
<td>Test/activity for each chapter</td>
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<td>26 h prep and completion</td>
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<td>Research project (case study)</td>
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<td>20 h</td>
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<td>Chapter assignments and webinars</td>
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<td>14 h</td>
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<td>Final exam prep (cumulative and skills)</td>
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<td>10 h</td>
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