Impact and Approval Signatures

See Course and Program Development Policy and Procedures (www.ubalt.edu/provost) for instructions.

School: Law  CAS  CPA

Contact Name: C. Wright Brown/M. Ketel  Phone: 410-837-5004/5278

Department/Division: Division of Science, Information Arts and Technologies  Date Prepared: 3/16/12

Proposed Semester of Implementation: Fall  Spring  Year: 2013

Type of Action: Add (New)  Deactivate  Modify  Other

Level of Action: Noncredit  Undergraduate  Graduate  Other

Action Being Requested (Select one category, either Course Actions or Program Actions):

Course Actions

- Original Subject Code/Course Number: COSC 412
- Original Course Title: Unix/Linux Administration

Program Actions

- Original Program Title:

Select one or multiple actions from one of the lists below (review the list of necessary documents and signatures):

Course Actions:

1. Experimental Course
2. Course Title
3. Course Credits
4. Course Number
5. Course Level
6. Pre- and Co-Requisite
7. Course Description
8. New Course
9. Deactivate Course
10. Other

Program Actions:

10. Program Requirements
11a. Undergraduate Specialization (24 credits or fewer)
11b. Master’s Specialization (12 credits or fewer)
11c. Doctoral Specialization (18 credits or fewer)
12. Minor (Add or Delete)
13. Closed Site Program
14. Program Suspension
15. Program Reactivation
16a. Certificate Program (UG/G) exclusively within existing degree program
16b. Certificate Program (UG/G) outside of or across degree programs (12 or more credits)
17. Off-Campus Delivery of Existing Programs
18a. Undergraduate Concentration (exceeds 24 credits)
18b. Master’s Concentration (exceeds 12 credits)
18c. Doctoral Concentration (exceeds 18 credits)
19. Program Title Change
20. Program Termination
21. New Degree Program
22. Other

Additional Documentation (Check all appropriate boxes of documents included; review the list of necessary documents):

- Summary Proposal (O)
- Course Definition Document (P)
- Full Five-Page MHEC Proposal (Q)
- Financial Tables (MHEC) (R)
- Other Documents as may be required by MHEC/USM (S)
- Other (T)

Summer 2010
### IMPACT REVIEW (review the list of necessary signatures):

<table>
<thead>
<tr>
<th>Impacted Entity</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Library</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ impact statement attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. OTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ impact statement attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. University Relations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ impact statement attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Admissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ impact statement attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ no impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ impact statement attached</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### APPROVAL SEQUENCE (review the list of necessary signatures):

<table>
<thead>
<tr>
<th>Approval Level</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Department/Division (Chair)</td>
<td>[signatures]</td>
<td>1/3/12</td>
</tr>
<tr>
<td>B. General Education (for No. 7, 8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Final Faculty Review Body Within Each School (Chair)</td>
<td>[signature]</td>
<td>12/1/12</td>
</tr>
<tr>
<td>D. Dean</td>
<td>[signature]</td>
<td>1/19/13</td>
</tr>
<tr>
<td>E. University Faculty Senate (Chair)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. University Council (Chair)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Provost and Senior Vice President for Academic Affairs</td>
<td>[signature]</td>
<td>4/1/13</td>
</tr>
<tr>
<td>H. President</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Board of Regents (notification only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Board of Regents (approval)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. MHEC (notification only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. MHEC (approval)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. Middle States Association notification</td>
<td>Required only if the University's mission is changed by the action</td>
<td></td>
</tr>
</tbody>
</table>

1 University Council review (for recommendation to the president or back to the provost) shall be limited to curricular or academic policy issues that may potentially affect the University's mission and strategic planning, or have a significant impact on the generation or allocation of its financial resources.

Summer 2010
Document O: Course and Program Development: SUMMARY PROPOSAL

See Course and Program Development Policy and Procedures (www.ubalt.edu/provost) for instructions.

SCHOOL:  ○ LAW  ○ MSB  ○ CAS  ○ CPA

CONTACT NAME: C. Wright Brown/M. Ketel  PHONE: 410-837-5004/5278

DEPARTMENT/DIVISION: Division of Science, Information Arts and Technologies  DATE PREPARED: 3/16/12

PROPOSED SEMESTER OF IMPLEMENTATION:  ○ fall  ○ spring  YEAR: 2013

ACTION BEING REQUESTED (select one category, either Course Actions or Program Actions):

○ COURSE ACTIONS  ○ PROGRAM ACTIONS

Original Subject Code/Course Number:

COSC 412

Original Course Title:

Unix/Linux Administration

Select one or multiple actions from one of the lists below (review the list of necessary documents and signatures):

<table>
<thead>
<tr>
<th>COURSE ACTIONS</th>
<th>PROGRAM ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Experimental Course</td>
<td>10. Program Requirements</td>
</tr>
<tr>
<td>2. Course Title</td>
<td>11a. Undergraduate Specialization (24 credits or fewer)</td>
</tr>
<tr>
<td>3. Course Credits</td>
<td>11b. Master's Specialization (12 credits or fewer)</td>
</tr>
<tr>
<td>4. Course Number</td>
<td>11c. Doctoral Specialization (18 credits or fewer)</td>
</tr>
<tr>
<td>5. Course Level</td>
<td>12. Minor (add or delete)</td>
</tr>
<tr>
<td>6. Pre- and Co-Requisite</td>
<td>13. Closed Site Program</td>
</tr>
<tr>
<td>7. Course Description</td>
<td>14. Program Suspension</td>
</tr>
<tr>
<td>✓ 8. New Course</td>
<td>15. Program Reactivation</td>
</tr>
<tr>
<td>9. Deactivate Course</td>
<td>16a. Certificate Program (UG/G) exclusively within existing degree program</td>
</tr>
<tr>
<td>22. Other</td>
<td>16b. Certificate Program (UG/G) outside of or across degree programs (12 or more credits)</td>
</tr>
<tr>
<td></td>
<td>17. Off-Campus Delivery of Existing Programs</td>
</tr>
<tr>
<td></td>
<td>18a. Undergraduate Concentration (exceeds 24 credits)</td>
</tr>
<tr>
<td></td>
<td>18b. Master’s Concentration (exceeds 12 credits)</td>
</tr>
<tr>
<td></td>
<td>18c. Doctoral Concentration (exceeds 18 credits)</td>
</tr>
<tr>
<td></td>
<td>19. Program Title Change</td>
</tr>
<tr>
<td></td>
<td>20. Program Termination</td>
</tr>
<tr>
<td></td>
<td>21. New Degree Program</td>
</tr>
<tr>
<td></td>
<td>22. Other</td>
</tr>
</tbody>
</table>

For changes to existing courses:

OLD TITLE

NEW TITLE

SUBJECT CODE/COURSE NO.  CREDITS

SUBJECT CODE/COURSE NO.  CREDITS
DESCRIBE THE REQUESTED COURSE/PROGRAM ACTION (additional pages may be attached if necessary):

To create a new course COSC 412, Unix/Linux Administration which will be part of the Applied Information Technology (AIT) 4 year program.

SET FORTH THE RATIONALE FOR THIS PROPOSAL:

Courses in network operating systems and protocol currently exist. No course teaches the administration of Unix and Linux server environments and operations. This new course will teach students advanced innovation in Unix/Linux system administration concepts, system installation, configure applications, file systems, configuring hardware/services, managing user accounts, system security, and backups.

This course will fill a learning gap in the current curriculum; offer an advanced complementary course to COSC 212 in the AIT program, a core requirement, and provide students with the foundation for further study of network and system administration.
1. DATE PREPARED
March 16, 2012

2. PREPARED BY
Cecelia Wright Brown/Mohammed Ketel

3. DEPARTMENT/DIVISION
Division of Science, Information Arts and Technologies

4. COURSE NUMBER(S) with SUBJECT CODE(S)
COSC 412

5. COURSE TITLE
Unix/Linux Administration

6. CREDIT HOURS
3

7. CATALOG DESCRIPTION
Students develop skills required to administer the Unix/Linux operating systems. Topics include installing and configuring a popular distribution, common tools and utilities, file system administration, user and group management, network/Internet service configuration, user and system security, shell scripting, kernel configurations, interoperability with Windows, back-up and storage, and troubleshooting. Lab fee required. Prerequisites: COSC 212, COSC 251 and MATH 201

8. PREREQUISITES
COSC 212, COSC 251, and Math 201

9. COURSE PURPOSE (how the course is to be used in the curriculum; e.g., required for the major, elective, etc.)
Required course for AIT Program majors in the network administration track.

10. GENERAL EDUCATION AREA (if applicable; e.g., social sciences, humanities, mathematics, etc.)
N/A

11. COURSE TYPE/COMPONENT (clinical, continuance, discussion, field studies, independent study, laboratory, lecture, practicum, research, seminar, supervision, thesis research, tutorial or workshop; this must match PeopleSoft 9.0 coding, so check with your dean's office if you are unsure of the correct entry)
Lecture

Summer 2010
13. CONTENT OUTLINE

1) Introduction to system administration
2) Certification objectives and operating system installation
3) Unix/Linux processes
4) System initialization and network services
5) Running the system: startup, shutdown, updates
6) Scripting for systems administration
7) Backup and scheduling, web sites and file system
8) Networking overview
9) UNIX mail environment
10) NFS, FTP, DNS, BIND and sharing configuration
11) System security, HTTP and HTTPS configuration
12) Firewall configuration
13) Digital certificates & Open SSH server configuration
14) System monitoring, performance analysis and troubleshooting
15) Disaster planning and recovery

14. LEARNING GOALS

Upon completion of the course students will be able to:

- Perform the role and common tasks of a system administrator.
- Install and configure UNIX/Linux operating system and applications.
- Apply advanced system commands and tools.
- Install, configure, and maintain various network and Internet services.
- Recognize and manage disks and file systems.
- Use shell/script programming to automate system maintenance and administrative tasks.
- Manage basic system and network security.
- Administer back-up, restore strategies and methods.

15. ASSESSMENT STRATEGIES

Lectures, exams, laboratory assignments, drills and research projects

16. SUGGESTED TEXT(S) and MATERIALS (e.g. textbooks, equipment, software, etc., that students must purchase)

By: Michael Jang, ISBN: 978-0071765657
Copyright: 2011, Publisher: McGraw-Hill Companies

By: Evi Nemeth, Garth Snyder, Trent Hein, and Ben Whaley, ISBN: 978-0131480056
Copyright: 2010, Publisher: Pearson Education, Inc.

17. SPECIAL GRADING OPTIONS (if applicable)

N/A

18. SUGGESTED CLASS SIZE

20

19. LAB FEES (if applicable)

$45 per course. Laboratory fees cover additional instructional costs incurred in the operation of computer laboratories necessary for teaching these courses and for students' preparation of classwork, including maintenance and routine upgrades to software and hardware, as well as the renewal of yearly software licenses.
12. FACULTY QUALIFIED TO TEACH COURSE
Mohammed Ketel and Cecelia Wright Brown

13. CONTENT OUTLINE

1) Introduction to system administration
2) Certification objectives and operating system installation
3) Unix/Linux processes
4) System initialization and network services
5) Running the system: startup, shutdown, updates
6) Scripting for systems administration
7) Backup and scheduling, web sites and file system
8) Networking overview
9) UNIX mail environment
10) NFS, FTP, DNS, BIND and sharing configuration
11) System security, HTTP and HTTPS configuration
12) Firewall configuration
13) Digital certificates & Open SSH server configuration
14) System monitoring, performance analysis and troubleshooting
15) Disaster planning and recovery

14. LEARNING GOALS

Upon completion of the course students will be able to:
- Perform the role and common tasks of a system administrator.
- Install and configure UNIX/Linux operating system and applications.
- Apply advanced system commands and tools.
- Install, configure, and maintain various network and Internet services.
- Recognize and manage disks and file systems.
- Use shell/script programming to automate system maintenance and administrative tasks.
- Manage basic system and network security.
- Administer back-up, restore strategies and methods.

15. ASSESSMENT STRATEGIES

Lectures, exams, laboratory assignments, drills and research projects

16. SUGGESTED TEXT(S) and MATERIALS (e.g. textbooks, equipment, software, etc., that students must purchase)

   By: Michael Jang, ISBN: 978-0071765657
   Copyright: 2011, Publisher: McGraw-Hill Companies

   By: Evi Nemeth, Garth Snyder, Trent Hein, and Ben Whaley, ISBN: 978-0131480056
   Copyright: 2010, Publisher: Pearson Education, Inc.

17. SPECIAL GRADING OPTIONS (if applicable)
N/A

18. SUGGESTED CLASS SIZE
20

19. LAB FEES (if applicable)
$45 per course

Laboratory fees cover additional instructional costs incurred in the operation of computer laboratories necessary for teaching these courses and for students' preparation of classwork, including maintenance and routine upgrades to software and hardware, as well as the renewal of yearly software licenses.