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| Dept Number | CS 425 | | Course Title | Principles of Virtualization and Cloud Computing | | | | | | |
| Semester Hours | 3 | | Course Coordinator | Dunren Che | | | | | | |
| Catalog Description | Cloud Computing (CC) represents a recent major strategic shift in computing and Information Technology. This course explores fundamental principles, foundational technologies, architecture, design, and business values of CC. Understanding will be reinforced through multiple angles including: analysis of real world case studies, hands-on projects and in-depth study of research developments. | | | | | | | | | |
| Textbooks | | | | | | | | | | |
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| No Textbook for these cross-listed courses | | | | | | | | | | |
| References | | | | | | | | | | |
| <ul style="list-style-type: none"> • <i>Cloud Computing</i>, Jamsa, Kris (2013). Jones & Bartlett Learning. ISBN: 9781449647391. • <i>Cloud Computing: Principles and Paradigms</i>, Buyya, Rajkumar; Broberg, James; and Goscinski, Andrzej (2011). John Wiley & Sons. ISBN: 9780470887998. | | | | | | | | | | |
| Course Learning Outcomes | | | | | | | | | | |
| <ul style="list-style-type: none"> • Understanding the principles of virtualization and Cloud Computing. • To learn the architectures and models of Cloud Computing. • To learn the Service Oriented Architecture (SOA). • To learn and practice the Cloud programming models and frameworks. | | | | | | | | | | |
| Assessment of the Contribution to Student Outcomes | | | | | | | | | | |
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| Outcome → | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Assessed → | | X | X | | X | | | | | X |
| Prerequisites by Topic | | | | | | | | | | |
| CS 330 with a grade of C or better or graduate standing. | | | | | | | | | | |

Major Topics Covered in the Course

1. Introduction to the course {1 lecture}
2. Introduction to Distributed Computing {2 lectures}
3. Introduction to Cloud Computing {2 lectures}
4. Virtualization technology {5 lectures}
5. Architectures and models of Cloud Computing {8 lectures}
6. Service Oriented Architecture (SOA) {4 lectures}
7. Cloud operating systems {5 lectures}
8. Cloud programming models and frameworks {6 lectures}
9. Cloud data storage and management {3 lectures}
10. Cloud security {2 lectures}
11. Mobile Cloud Computing {2 lectures}