



UNIVERSITI TEKNOLOGI MARA

CSC776: EMERGENT COMPUTING TECHNOLOGIES

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| Course Name (English) | EMERGENT COMPUTING TECHNOLOGIES APPROVED |
| Course Code | CSC776 |
| MQF Credit | 3 |
| Course Description | This course will explore current emergent computing technologies globally and locally to keep the students abreast with the opportunities created by these emergent technologies. Based on research papers, industry reports, talks and visits, students will be required to explore the emerging computing technologies body of knowledge, analyse and appraise them. This course also provides the opportunity for students to relate emerging computing technologies, their significance, the impact on society, and values, as well as a platform to sharpen their leadership and teamwork skills. It will explore different current emerging computing technologies including the Internet of Things, cloud computing, mobile computing, networks, end user computing, big data and analytics. This course will cover emergent computing technologies such as those outline below, but the list of actual technologies covered may change as the technologies progress, in terms of both additions and deletions of technologies. The course will be based mostly on the most recent research papers on emerging computing technologies and thus the detailed course contents may and will change accordingly. |
| Transferable Skills | Critical thinking, critical writing, appraisal of technologies |
| Teaching Methodologies | Lectures, Blended Learning, Seminar/Colloquium, Discussion |
| CLO | CLO1 Appraise current emerging computing technologies. CLO2 Relate emerging computing technologies, their impact and values CLO3 Integrate leadership and teamwork skills in interpreting the feasibility of implementing one or more emerging computing technologies in the Malaysian context |
| Pre-Requisite Courses | No course recommendations |
| Topics | |
| 1. Introduction 1.1) N/A | |
| 2. Internet of Things 2.1) N/A | |
| 3. Cloud computing 3.1) N/A | |
| 4. Mobile computing 4.1) N/A | |
| 5. Networks 5.1) N/A | |
| 6. End user computing 6.1) N/A | |
| 7. Analytics 7.1) N/A | |
| 8. Other emergent computing technologies 8.1) N/A | |

| Assessment Breakdown | | % | |
|-----------------------|--|---------|--|
| Continuous Assessment | | 100.00% | |

| Details of Continuous Assessment | Assessment Type | Assessment Description | % of Total Mark | CLO |
|----------------------------------|-----------------|---------------------------|-----------------|------|
| | Assignment | Assignment 1 | 10% | CLO1 |
| | Assignment | Report on field trip | 20% | CLO2 |
| | Assignment | Report on industrial talk | 20% | CLO3 |
| | Assignment | Assignment 2 | 20% | CLO2 |
| | Test | Test | 30% | CLO1 |

| Reading List | Recommended Text |
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| | <ul style="list-style-type: none"> • ACM, <i>ACM Journal on Emerging Technologies in Computing (JETC)</i>, ACM New York, NY, USA • ACM, <i>ACM Journal on Emerging Technologies in Computing Systems</i>, ACM New York, NY, USA. • IEEE, <i>IEEE Transactions on Emerging Topics in Computing</i>, IEEE USA • Galis, A. & Gavras, A (Eds.) 2013, <i>The Future Internet – Future Internet Assembly 2013: Validated Results and New Horizons, Lecture Notes in Computer Science 7858</i> Springer • Jacko, J 2012, <i>Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications</i>, 3rd Ed., CRC Press Boca Raton • Soares, S. 2013, <i>Big Data Governance: an Emerging Imperative</i>, MC Press |

| Article/Paper List | Recommended Article/Paper Resources |
|--------------------|---|
| | <ul style="list-style-type: none"> • Satyanarayanan, M. 2017, The emergence of edge computing, <i>IEEE Computer</i>, 50(1), 30-39 • Gros, B. (2016) The dialogue between emerging pedagogies and emerging technologies, <i>The Future of Ubiquitous Learning</i>, 3-23 • Gupta, A., & Jha, R. K. 2015, survey of 5G network: Architecture and emerging technologies, <i>IEEE Access</i>, 3, 1206-1232 • Jones, V. K., & Sampath, H. 2015, Emerging technologies for WLAN, <i>IEEE Communications</i>, 53(3), 141-149 • West, D. M. 2015, What happens if robots take the jobs? The impact of emerging technologies on employment and public policy, <i>Centre for Technology Innovation at Brookings</i> • Hossain, E., & Hasan, M. 2015, 5G cellular: key enabling technologies and research challenges, <i>IEEE Instrumentation & Measurement</i>, 18(3), 11-21 • Chin, W. H., Fan, Z., & Haines, R. 2014, Emerging technologies and research challenges for 5G wireless networks, <i>IEEE Wireless Communications</i>, 21(2), 106-112 • Khanagha, S., Volberda, H., Sidhu, J., & Oshri, I. 2013, Management innovation and adoption of emerging technologies: The case of cloud computing, <i>European Management Review</i>, 10(1), 51-67 • Daim, T. U., Rueda, G., Martin, H., & Gerdtsri, P. 2006, Forecasting emerging technologies: Use of bibliometrics and patent analysis., <i>Technological Forecasting and Social Change</i>, 73(8), 981-1012. • Scheufele, D. A., & Lewenstein, B. V. 2005, The public and nanotechnology: How citizens make sense of emerging technologies, <i>Journal of Nanoparticle Research</i>, 7(6), 659-667 • Other relevant research and technical papers |

| Other References | This Course does not have any other resources |
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