



UNIVERSITI TEKNOLOGI MARA

SCE553: CREATIVITY AND CREATIVE TEACHING IN SCIENCE

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| Course Name (English) | CREATIVITY AND CREATIVE TEACHING IN SCIENCE APPROVED |
| Course Code | SCE553 |
| MQF Credit | 3 |
| Course Description | Students learn in meaningful way about the general notion of creativity and creativity in the context of science. Students generate alternative methods to science teaching with creativity as their primary goal. Students need to discuss topics such as Baroque music, Phet, movie clips, science museum, infographic, and playground as venue for science learning. The course uses inquiry method as students construct own knowledge. The Instructor mainly acts as facilitator and advisor. Students are expected to work on each creation in a group of four, in search of instructional materials and will be required to present their search. |
| Transferable Skills | Science process skills creative thinking skills |
| Teaching Methodologies | Lectures, Inquiry-based Learning, Problem Based Learning (PBL), Discussion, Presentation |
| CLO | CLO1 Demonstrate creative skills in teaching science CLO2 Explain an alternative method in teaching science by embedding elements of creativity CLO3 Organize a creative project to teach science using the creativity framework |
| Pre-Requisite Courses | No course recommendations |
| Topics | |
| 1. The unnatural thoughts in science | 1.1) n/a |
| 2. Creative thinking | 2.1) n/a |
| 3. Creativity in Science | 3.1) n/a |
| 4. Teaching for creativity in science | 4.1) n/a |
| 5. Towards a more authentic out of school science learning | 5.1) n/a |
| 6. Toys | 6.1) N/A |
| 7. Baroque music in learning | 7.1) n/a |
| 8. Science Museum/Centre | 8.1) n/a |
| 9. Theme park | 9.1) n/a |
| 10. Play ground | 10.1) n/a |
| 11. Generic bad movie science | 11.1) n/a |
| 12. Analyzing science in movie with scientific theme | 12.1) n/a |
| 13. Project sharing | 13.1) N/A |

| Assessment Breakdown | | % | | |
|----------------------------------|--|---|-----------------|------|
| Continuous Assessment | | 100.00% | | |
| Details of Continuous Assessment | Assessment Type | Assessment Description | % of Total Mark | CLO |
| | Assignment | weekly presentation of a topic assigned by the facilitator | 20% | CLO1 |
| | Assignment | Final Creative Project - infographic | 40% | CLO2 |
| | Group Project | Innovative science toy x 2 | 40% | CLO3 |
| Reading List | Reference Book Resources | <ul style="list-style-type: none"> Wolpert, L 2009, <i>The Unnatural Nature of Science</i>, Harvard University Press Gardner, R 2013, <i>The Physics of Toys and Games Science Project</i>, Enslow Publishers DiYanni, R. 2015, <i>Critical and creative thinking: a brief guide for teacher</i>, John Wiley & Sons. | | |
| Article/Paper List | Recommended Article/Paper Resources | <ul style="list-style-type: none"> Featonby D 2005, Toys and physics, <i>Phys. Educ.</i>, 40, 537 Anton E. Lawson 2001, Promoting Creative and Critical Thinking Skills in College Biology, <i>Bioscene</i>, 27, 13 http://papa.indstate.edu/amcbt/volume_27/v27-1p13-24.pdf Guisasola, J., Morentin, M., & Zuza, K. 2005, School visits to science museums and learning sciences: a complex relationship., <i>Physics Education</i>, 40(6) Beh, K.L. 1996, Musics in Sc. And Technology Education: A personal experience, <i>Iktasa</i>, 24 | | |
| | Reference Article/Paper Resources | <ul style="list-style-type: none"> Torrance Test of Creative Thinking http://innovators-guide.ch/wp-content/uploads/2012/12/torrance-creativity-test.p df Braund, Martin and Reiss, Michael 2006, Towards a more authentic science curriculum: the contribution of out-of-school learning, <i>International Journal of Science Education</i>, 12 [ISSN: 0950-0693] http://eprints.ioe.ac.uk/454/ | | |
| Other References | <ul style="list-style-type: none"> Website T. K. Rogers. <i>Generic Bad Movie Physics</i> http://www.intuitor.com/moviephysics/ | | | |