|  |  |
| --- | --- |
| Course Code and Course Title | ภาษาไทย วทคร ๑๘๓ การเรียนรู้และผู้เรียนแห่งศตวรรษที่ ๒๑  ภาษาอังกฤษ SCID 183 21st Century Learning and Learners |
| Number of Credits | 3 (3-0-6) (Lecture 3 hours – Laboratory 0 hour/week - Self-Study 6 hours/ week) |
| Curriculum and Course Type | Program of Study Bachelor’s Degree Program in Biomedical Engineering  (International Program)  Course Type General Education |
| Course Coordinator | Assoc. Prof. Wannapong Triampo, Ph.D.  Address: Department of Physics, Faculty of Science, Mahidol University  272 Rama VI Road, Ratchathewi District, Bangkok 10400, THAILAND Tel. 02-201-5770-1  e-mail: [wtriampo@gmail.com](mailto:wtriampo@gmail.com), wannapong.tri@mahidol.edu |
| Semester/Year of Study | Academic Year 2020 Second Semester **(2/2020)** |
| Prerequisite | None |
| Co-requisite | **None** |
| Day/Time/Study Site Location | Friday / 2:30:5:30 PM  Faculty of Science, Mahidol University, Salaya Campus (ONLINE) |
| Date of Latest Revision | **30 December 2020** |

**Course Learning Outcomes (CLOs)**

By the end of the course, students are able to

CLO1 Explain key knowledge, ideas, theories, and principles of learning in the context of the 21st century

CLO2 Communicate and share both in an oral and written presentation using technology in the context of the 21st century

CLO3 Analyze the learning process and tools used in learning and solving the problem in real life.

CLO4 Design and create an effective learning strategy and plan

**Course Description** Nature and philosophy of science; the history of and origin science; measurement and scientific discovery; from Galileo to Einstein; science and STEM as inquiry; biology: theory and lab; chemistry: theory and Lab; physics: theory and lab; integrated science; contemporary science and technology.

**Credit hours / trimester**

|  |  |  |  |
| --- | --- | --- | --- |
| **Lecture**  **(Hours)** | **Additional class**  **(Hours)** | **Laboratory/field trip/internship**  **(Hours)** | **Self- study**  **(Hours)** |
| 45 hours  (3 hours x 15 weeks) | - |  | 90 hours  (6 hour/ 15 weeks) |

**Number of hours that the lecture provides individual counseling and guidance**

2 hour / week or student requirement during prescribed date and time

**Evaluation of the CLOs**

**Learning Measurement and Evaluation**

**A. Formative Assessment**

Quiz & feedback for all CLOs with weight 50% (of total weight)

**B. Summative Assessment**

(1) Evaluation Methods and Weight

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Learning Outcomes** | | **Evaluation Strategies** | | | **Weight (%)** |
| **Class Attendance, Participation, and Behavior in Class** | **Written Exam** | **Class Project**  **Executed without Plagiarism** |
| CLO1 |  | 2% | 8% | - | 10% |
| CLO2 |  | 2% | 8% | - | 10% |
| CLO3 |  | 2% | 8% |  | 10% |
| CLO4 |  | 2% | 8% | 10% | 20% |
|  | **Total** | **8%** | **32%** | **10%** | **50%** |

**Note:** Students have the right to request a review of a grade and appeal evaluation decisions

(Mahidol University Disciplinary Measures 2010)

Measurement and evaluation

After completion of the evaluation process, each student is assigned a criterion-referenced grade (as shown in the table below). Evaluation and achievement will be justifying according to Faculty and University code, conducted by grading system of A, B+, B, C+, C, D, and F. To pass this course, students must earn a grade of a least D.

The **tentative** Grade evaluation

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Percentage**  **of Evaluation** | Below 50 | 50-54.99 | 55-59.99 | 60-64.99 | 65-69.99 | 70-74.99 | 75-79.99 | 80-100 |
| **Grade** | F | D | D+ | C | C+ | B | B+ | A |

**Teaching staff:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Name** | **Email** |
| WT | Wannapong Triampo  R3/1- SC 3 Building N (MUSC-Salaya) | [wtriampo@gmail.com](mailto:wtriampo@gmail.com), wannapong.tri@mahidol.edu |

**Teaching Schedule 2nd Semester of Academic Year 2020-21**

**Teaching plan (year 2021)**

**Teaching Plan**

| **Week** | **Topic** | **Hours** | | | **Teaching methods/ multimedia** | **Instructor** |
| --- | --- | --- | --- | --- | --- | --- |
| **Lecture** | **Labora-**  **tory** | **Self-**  **study** |
| 1  19 Jan | * Course orientation   What is learning? | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 2  26 Jan | Learning Theory & 21st Century Learner | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 3  2 Feb | Learning Theory & 21st Century Learner | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 4  9 Feb | Learning Theory & 21st Century Learner | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 5  16 Feb | 21st century Skills & Competencies | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 6  23 Feb | 21st century Skills & Competencies | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 7  2 March | Logical thinking | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 8  9 March | Critical thinking | 3 | 0 | 6 | Active lecture | **Wannapong** |
| 9  16 Mar | Midterm | 3 | 0 | 6 | Active lecture | **Wannapong**  Triampo |
| 10  23 Mar | Creative thinking & innovation | 3 | 0 | 6 | Group discussion  Active lecture | **Wannapong**  Triampo |
| 11  30 Mar | Computational thinking | 3 | 0 | 6 | Group discussion  Active lecture | **Wannapong**  Triampo |
| 12  6 April | Strategic thinking | 3 | 0 | 6 | Active Lecture,  Group discussion | **Wannapong**  Triampo |
| 13  13 April | Problem solving | 3 | 0 | 6 | Active Lecture,  Group discussion | **Wannapong**  Triampo |
| 14  20 April | Online learning & MOOC | 3 | 0 | 6 | Active Lecture,  Group discussion  Project based learning | **Wannapong**  Triampo |
| 15  27 April | Technology-enhanced learning I | 3 | 0 | 6 | Active Lecture,  Project-based learning | **Wannapong**  Triampo |
| 16  4 May | Technology-enhanced learning II | 3 | 0 | 6 | Active Lecture,  Project-based learning | **Wannapong**  Triampo |
| **17**  **12 May** | **Final examination** | | | | | |
|  | **Total hours** | 45 | 0 | 90 |  |  |

**Teaching Materials and Resources**

Susan A. Ambrose., et al., How Learning Works: Seven Research-Based Principles for Smart Teaching, 2010, Wiley