COURSE SYLLABUS

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| Course Code | 01286131 | | | Course Title | | Object-Oriented Programming | | | | | | | |
| Credit | 4 (3-3-8) | | | Prerequisite | | 01286121 Computer Programming | | | | | | | |
| Semester | 2/2022 | | | | | | | | Group | | 1 | | | |
| Responsible Person | Dr. Natthapong Jungteerapanich | | | | | | | | | | | | | |
| Instructor(s) | Mr. Ekaphol Anantapornkit | | | | | | | | | | | | | |
| Teaching Assistant(s) | Mr. Tisanalak Makee  Mr. Anucha Cheewachanon ([64011338@kmitl.ac.th](mailto:64011338@kmitl.ac.th))  Mr. Dulapah Vibulsanti ([64011388@kmitl.ac.th](mailto:64011388@kmitl.ac.th))  Mr. Phobphoomin Siriboon ([64011548@kmitl.ac.th](mailto:64011548@kmitl.ac.th))  Mr. Thammanant Thamtaranon ([64011658@kmitl.ac.th](mailto:64011658@kmitl.ac.th)) | | | | | | | | | | | | | |
| Lecture Hours | Fri 9.00-12.00 | | | | | | Consultation Period | | | By LINE or email all the time | | | | |
| Website | <https://goedu.kmitl.ac.th/course/view.php?id=17266> | | | | | | | | | | | | | |
| Course Learning Outcomes | | | | | | | | | | | | | | |
| CLO-1 Understanding of computer programming concepts  CLO-2 Ability to design and develop computer programs  CLO-3 Understanding of program structure and algorithms  CLO-4 Understanding of the key concepts of object-oriented programming including objects and classes, encapsulation, abstraction, inheritance and polymorphism  CLO-5 Ability to analyze program specifications and apply the right design with appropriate classes and objects  CLO-6 Understanding of the abstract machine model from compile-time to run-time perspective  CLO-7 Understanding of the basic concepts of error handling mechanisms including error code checking and exception handling  CLO-8 Understanding of the principles of object-oriented design and basic UML modelling diagram  CLO-9 Develop analytical thinking and problem-solving skills to prepare students for the real-world challenges in technology related field | | | | | | | | | | | | | | |
| Teaching Plan | | | | | | | | | | | | | | |
| Week | | Topic | | | | | Activity | | | CLO | | | Note | |
| 1 | | Introduction to C++ programming | | | | | Lecture | | | CLO 1 | | | Chapter 1-2 | |
| 2 | | Structured Programming | | | | | Lecture | | | CLO 2-3 | | | Chapter 2-4 | |
| 3 | | Functions | | | | | Lecture | | | CLO 2-3 | | | Chapter 5 | |
| 4 | | Functions and Program Structure | | | | | Lecture | | | CLO 2-3,  6 | | | Chapter 5 | |
| 5 | | Sequential Containers (Vectors and Strings) | | | | | Lecture | | | CLO 2-3,  6 | | | Chapter 6-8 | |
| 6 | | User-Defined Types | | | | | Lecture | | | CLO 2-4 | | | Chapter 9 | |
| 7 | | Memory Management | | | | | Lecture | | | CLO 2-3,  6 | | | Chapter 6-7, 9, 13 | |
| 8 | | Inheritance | | | | | Lecture | | | CLO 2, 4, 5 | | | Chapter 10 | |
| 9 | | Memory Management (Part II) | | | | | Lecture | | | CLO 2-6 | | | Chapter 6-7, 9, 10, 13 | |
| 10 | | Algorithm Design | | | | | Lecture | | | CLO 2-3, 6-7, 9 | | | Chapter 11-15 | |
| 11 | | Data Abstraction | | | | | Lecture | | | CLO 4-5, 8-9 | | | Chapter 9-10, 13 | |
| 12 | | Object-Oriented Modeling | | | | | Lecture | | | CLO 4-5, 8-9 | | | Chapter 9-10, 13 | |
| 13 | | Advanced C++ | | | | | Lecture | | | CLO 6-7, 9 | | | Chapter 13 | |
| 14 | | Selected Problems and Applications | | | | | Lecture | | | CLO 9 | | |  | |
| Assessment Plan | | | | | | | | | | | | | | |
| Assessment Activity | | | % | | Schedule | | | CLO | | | | | Note | |
| 1. Lab attendance | | | 10 | |  | | | CLO 1-9 | | | | |  | |
| 2. Lab exercises | | | 10 | |  | | | CLO 1-9 | | | | |  | |
| 3. Homework | | | 10 | |  | | | CLO 1-9 | | | | |  | |
| 4. Software project | | | 15 | |  | | | CLO 1-9 | | | | |  | |
| 5. Midterm exam | | | 20 | | Week 8 | | | CLO 1-4, 6 | | | | |  | |
| 6. Final exam | | | 35 | | Week 18 | | | CLO 1-9 | | | | |  | |
| Primary textbooks/ materials | 1. Big C++: Late Objects, 3rd edition (2017), Cay S. Horstmann  2. Accelerated C++: Practical Programming by Example, 1st Edition (2000), Andrew Koenig, Barbara E. Moo | | | | | | | | | | | | | |
| Supplementary materials/  resources | 1. The C++ Programming Language, 4th edition (2013), Bjarne Stroustrup  2. Programming: Principles and Practice Using C++, 2nd edition (2014), Bjarne Stroustrup  3. The C++ Standard Library, 2nd edition (2012), Nicolai M. Josuttis  4. <https://en.cppreference.com>  5. <https://www.doc.ic.ac.uk/~wjk/c++Intro> | | | | | | | | | | | | | |
| Class policy | Lateness more than 15 minutes is considered absence. | | | | | | | | | | | | | |
| Grading policy | - | | | | | | | | | | | | | |
| Last revised by | Mr. Ekaphol Anantapornkit | | | | | | | | | Date | | 9 January 2022 | | |