

Course Syllabi

1. TICS-00033 SOFTWARE ANALYSIS AND DESIGN

2. 192 credits hours.

3. Bibliography

- Design Patterns, Eric Gamma and the gang of four, 1995
- Software Engineering, Ian Sommerville, 2011

4. Specific Course Information

- a. The subject presents students with the methods of analysis, design and software development. It presents the methods of development, design patterns, development models, and main software architectures in the context of object-oriented programming.
- b. Prerequisites:
 - TICS-00057 PROGRAMMING II: DATA STRUCTURES AND ALGORITHM ANALYSIS

5. Learning Objectives of the Course

- a. Know the process of software development, software analysis and design, the importance of design patterns in the object-oriented development process, as well as the current trend in terms of methodologies.
 - Know the importance of software analysis and design in the object-oriented development process.
 - Know the different methods of software development.
 - Know and apply UML and PUDS.
 - Know and apply design patterns to practical cases.
 - Know and apply Agile methods.
 - Know the software models.
 - Know the different architectures of the software, and the development contexts.
- b. Learning Outcomes
 - Know and apply software design patterns.
 - Learn about development methods, their advantages and disadvantages and application.
 - Know and apply interface-based design.
 - Create programs using models and based on design patterns.
 - Understand and apply agile methods.
 - It knows from a historical perspective the evolution of development methods.

6. Course Topics

- 0. syllable presentation, evaluation and diagnosis.
- Historical evolution of a &d software. import of engineering requirements.
- Methods of analysis & design
- Uml unified modeling language, unified modeling language.
- Puds unified software development process.
- Fundamentals of object-oriented programming: heritage, polymorphism, encapsulation. fundamentals of java programming language.
- Software design patterns. erick gamma and the band of 4.
- 7. agile methods: extreme and scrum.
- 8. architectures software, test drive development tdd, model drive development mdd.

