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| COURSE | Name : Optimization Techniques |
| | Code : EE184523 |
| | Credits : 4 |
| | Semester : V |

Description of Course

Optimization Techniques course discusses optimization concept, optimization mathematical basic, analytical solution for optimization problems, Numerical solution for unconstraint optimization problem, Linear programming and its variants, deterministic or stochastic dynamic programming, and metaheuristic methods.

Learning Outcomes

KNOWLEDGE

(P02) Mastering the concepts and principles of engineering, and implementing them in the form of procedures for analysis and design in power systems, control systems, multimedia telecommunications, or electronics.

SPECIFIC SKILL

(KK01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

(KK02) Able to describe the completion of engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

GENERAL SKILL

(KU01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

(KU02) Able to describe the completion of engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

(KU05) Able to utilize analytical and engineering design tools based on appropriate information and computation technology to perform engineering activities in power systems, control systems, multimedia telecommunications, or electronics

ATTITUDE

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently

Course Learning Outcomes

KNOWLEDGE

Mastering the concept of optimization and various forms of optimization issues and methods of completion..

SPECIFIC SKILL

Able to get mathematical model of optimization problem and solve various optimization problems by using analytical approach, numerical approach, matrix approach and metaheuristic method.

GENERAL SKILL

Able to use Matlab, Delphi and Visual C software to solve optimization problems.

ATTITUDE

Demonstrate a responsible attitude towards the work in the field of expertise independently.

Main Subjects

1. Optimization Concepts
2. Basic - Basic Mathematics Optimization
3. Numerical Solutions Optimization Problems
4. Linear Programming
5. Linear Programming Variations
6. Dynamic Deterministic Programming
7. Stochastic Dinamic Programming
8. Case Studies
9. Metaheuristic Method

Reference(s)

- [1] Alkaff, A. dan Gamayanti, N. Diktat Kuliah Penyelidikan Operasi
- [2] Analisa Hillier and Lieberman., "Introduction to Operation Research", 8th Edition, Mc Graw Hill international Edition, 2004
- [3] Hamdy A taha., "Operation Research : an Introduction", 8th Edition, Prentice Hall, 2006
- [4] WAGNER, H.M., "Principles of Operations Research", 2nd edition", Prentice-Hall, New Jersey 1980.

Prerequisite(s)

EE184304 Ordinary and Partial Differential Equations
