UNIVERSITAS
Nusa Putra

LITTLE STEP FOR WIDE VISION

SILABUS MATA KULIAH LOGIKA INFORMATIKA

Informatics Logic Course Syllabus

A. Identitas Mata Kuliah

Course Identity

Dasar Kurikulum	: Kurikulum Tahun 2023
Nama Mata Kuliah	: Logika Informatika
Kode Mata Kuliah	: IF1102
Kredit	: 3 SKS
Curriculum Based	*: Curriculum Year 2023*
Name of Course	*: Informatics Logic*
Course Code	*: IF1102*
Credit	*: 3 Credits*

B. Deskripsi Mata Kuliah

Course Description

Mata kuliah ini memberi siswa dasar yang kuat dalam penalaran logis dan penerapannya dalam ilmu komputer dan informatika. Memperkenalkan siswa pada konsep dan teknik dasar dalam logika formal, menerapkan penalaran logis dalam menganalisis dan memecahkan masalah.

This course gives students a basic foundation in logical reasoning and its applications in computer science and informatics. Introducing students to basic concepts and techniques in formal logic, applying logical reasoning in analyzing and solving problems.

C. Capaian Pembelajaran Mata Kuliah (CPMK)

Course Learning Outcomes (CLO)

Kode *Code*	**Capaian Pembelajaran Mata Kuliah (CPMK)** *Course Learning Outcomes (CLO)*
CLO1	Mahasiswa mampu menerapkan konsep-konsep logika proposisi dan predikat untuk menyelesaikan tugas. *Students are able to apply propositional and predicate logic concepts to complete assignments.*
CLO2	Mahasiswa mampu menerapkan konsep-konsep konvers, invers dan kontraposisi, Ekuivalensi Logika serta Inferensi Logika untuk menyelesaikan tugas. *Students are able to apply the concepts of conversion, inverse and contraposition, Logical Equivalence and Logical Inference to complete assignments.*
CLO3	Mahasiswa mampu menerapkan konsep gerbang logika, serta pembuktian validitas argument pada penyelesaian tugas. . *Students are able to apply the concept of logic gates, as well as prove the validity of arguments in completing assignments.*

UNIVERSITAS Nusa Putra

LITTLE STEP FOR WIDE VISION

CLO4	Mahasiswa mampu menganalisa konsep first order logic pada penyelesaian tugas. *Students are able to analyze the concept of first order logic in completing assignments.*

D. Pokok Bahasan

Course Material

1. Konsep Logika
2. Logika Proposisi dan Predikat
3. Proposisi Majemuk
4. Ingkaran Pernyataan
5. Tautologi, Kontradiksi dan Contingent
6. Ekuivalensi Logika
7. Inferensi Logika
8. Kalimat Berkuantor
9. Gerbang Logika
10. Pembuktian Validitas Argumen
11. Tablo Semantik
12. Substitusi
13. *First Order Logic*
14. Latihan - Analisa Logika Matematika

1. *Concept of Logic*
2. *Logic of Propositions and Predicates*
3. *Compound Proposition*
4. *Negation of Statement*
5. *Tautology, Contradiction and Contingent*
6. *Logical Equivalence*
7. *Logical Inference*
8. *Quantifier Sentence*
9. *Logic Gates*
10. *Proving the Validity of Arguments*
11. *Semantic Tableu*
12. *Substitution*
13. *First Order Logic*
14. *Mathematic Logic Analysis- Exercises*

E. Pustaka

References

1. Irving M. Copi Carl Cohen Kenneth McMahon (2014), Introduction to Logic, Pearson Education Limited
2. Suraya (2019), Buku Ajar Logika Informatika, Teknik Informatika Fakultas Teknologi Industri Institut Sains & Teknologi AKPRIND Yogyakarta
3. Maxrizal, S.PdI, M.Sc (2015) Dasar Logika Informatika , Mediakom Yogyakarta
4. Chiara Ghidini and Luciano Serafini (2013), MATHEMATICAL LOGIC EXERCISES