



## RENCANA PEMBELAJARAN SEMESTER (RPS)

Teaching Plan

### A. Identitas RPS-Mata Kuliah

Teaching Plan Course Identity

Nama Mata Kuliah : Logika Informatika  
Kode Mata Kuliah : IF1102  
Jumlah SKS : 3 SKS  
Semester : 1 (Ganjil)  
Tahun Akademik : TA 2023 - 2024  
Nama Dosen Pengampu : Gina Purnama Insany,S.Si.T., M.Kom  
Dasar Silabus Kurikulum : Silabus Kurikulum Tahun 2023

Course Name : Informatics Logics  
Course Code : IF1102  
Number of Credits : 3 SKS  
Semester : 1 (Odd)  
Academic year : TA 2023 - 2024  
Lecturer : Gina Purnama Insany,S.Si.T., M.Kom  
Syllabus Basic Curriculum : Curriculum Syllabus, year 2023

### B. Tindakan CQI (Course Quality Improvement) yang akan dilaksanakan pada semester

CQI actions to be undertaken this semester

### C. Capaian Pembelajaran Mata Kuliah (CPMK)

Learning Outcomes (LO)

| No  | Capaian Pembelajaran Mata Kuliah (CPMK/CLO)  | PROGRAM LEARNING OUTCOMES (PLO) | Level Taxonomy Blooms |
|-----|--|---------------------------------|-----------------------|
| LO1 | Mahasiswa mampu menerapkan konsep-konsep logika proposisi dan predikat untuk menyelesaikan tugas.<br><br><i>Students are able to apply propositional and predicate logic concepts to complete assignments.</i> | PL05                            | C3                    |
| LO2 | Mahasiswa mampu menerapkan konsep-konsep konvers, invers dan kontraposisi, Ekuivalensi Logika serta Inferensi Logika untuk menyelesaikan tugas.  | PL06                            | C3                    |

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|     | <i>Students are able to apply the concepts of conversion, inverse and contraposition, Logical Equivalence and Logical Inference to complete assignments.</i>  |      |    |
| LO3 | Mahasiswa mampu menerapkan konsep gerbang logika, serta pembuktian validitas argument pada penyelesaian tugas.<br><br><i>Students are able to apply the concept of logic gates, as well as prove the validity of arguments in completing assignments.</i> | PL07 | C3 |
| LO4 | Mahasiswa mampu menganalisa konsep first order logic pada penyelesaian tugas.<br><br><i>Students are able to analyze the concept of first order logic in completing assignments.</i>  | PL09 | C2 |

#### D. Deskripsi Mata Kuliah

##### Course Description

Mata kuliah ini membahas tentang konsep dasar logika, operator logika, proposisi majemuk, algoritma, simplifikasi dan falsifikasi, logika predikat dan lain sebagainya.

*This course discusses the basic concepts of logic, logical operators, compound propositions, algorithms, simplification and falsification, predicate logic and so on.*

#### E. Metode Pembelajaran

##### Teaching Methods

Pembelajaran menggunakan pendekatan SCL (*Student Center Learning*) dan PBL (*Problem Based Learning*) dengan menggunakan beberapa metode sebagai berikut :

- Ceramah Tatap Muka (Luring)
- Diskusi Tatap Muka (Luring)
- Tutorial
- Praktikum Laboratorium
- E-Learning (Daring)
- Live Discussion (Daring)

*Learning uses the SCL (Student Center Learning) and PBL (Problem based Learning) approaches by using the following methods:*

- Face to Face Lectures (Offline)
- Face-to-face Discussion (Offline)
- Tutorials
- Laboratory Practicum
- E-Learning (Online)
- Live Discussion (Online)

#### F. Deskripsi Pengalaman Belajar Mandiri

##### Description of Independent Learning

- Quiz** : Mahasiswa menjawab soal-soal Quiz pada setiap sesi pertemuan dimana soal disajikan dalam bentuk pilihan ganda,
- Tugas Diskusi** : Mahasiswa menjawab soal diskusi pada setiap sesi pertemuan, dimana soal dalam bentuk essay berupa pendalaman dan pemecahan masalah terhadap materi yang diberikan.



c. **Tugas Project** : Mahasiswa membuat satu buah tugas berupa project dalam satu semester terkait dengan Pencapaian LO pada mata kuliah yang dapat dikaitkan dengan bidang penelitian dan pengabdian.

- Quiz: Students answer Quiz questions at each meeting session where the questions are presented in the form of multiple choice,*
- Discussion Tasks: Students answer discussion questions at each meeting session, where the questions are in the form of essays in the form of deepening and problem solving on the material given.*
- Project Assignments: Students make one assignment in the form of a project in one semester related to LO Achievements in subjects that can be related to the field of research and service.*

## G. Waktu Pembelajaran Mahasiswa

*Student Learning Time (SLT)*

|   | Waktu Belajar Mahasiswa<br>(Student Learning Time)                             |           |                       |  |           |                       |  |           |                       |                               |           |                       |
|---|--|-----------|-----------------------|--|-----------|-----------------------|--|-----------|-----------------------|-------------------------------|-----------|-----------------------|
|   | Perkuliahan, Tutorial, Praktek Lab, Project<br>(Guided Learning Time)          |           |                       |  |           |                       | Tugas Terstruktur, Belajar mandiri,Project, Ujian<br>(Independent Learning Time) |           |                       |                               |           |                       |
| Kegiatan Belajar<br>(Learning Activity) | Jam Tatap Muka<br>Official Contact Hours                                       | Frek Freq | Total Jam Hours Total | Belajar Terpadu<br>Guided Learning Hours | Frek Freq | Total Jam Hours Total | Jam Belajar Mandiri<br>Self Study Hours  | Frek Freq | Total Jam Hours Total | Waktu Ujian<br>Assesment Time | Frek Freq | Total Jam Hours Total |
| Perkuliahan Kelas                       | 2,5  | 14        | 35                    |  |           |                       |  |           |                       | ...                           | ...       | ...                   |
| Tutorial /Prak. Lab                     |  |           | ...                   | ...                                      | ...       | ...                   | 2  | 14        | 28                    | ...                           | ...       | ...                   |
| Quiz                                    |  |           | ...                   | ...                                      | ...       | ...                   | 1  | 14        | 14                    | ...                           | ...       | ...                   |
| Tugas Diskusi                           |  |           | ...                   | ...                                      | ...       | ...                   | 3  | 14        | 42                    | ...                           | ...       | ...                   |
| Ujian                                   |  |           | ...                   | ...                                      | ...       | ...                   | ...  | ...       | ...                   | 1.5                           | 2         | 3                     |
| Project                                 | ...  | ...       | ...                   | ...                                      | ...       | ...                   | ...  | ...       | ...                   | ...                           | ...       | ...                   |
| TOTAL                                   | 35 Jam (Hour)  |           |                       | Jam (Hour)                               |           |                       | 84 Jam (Hour)  |           |                       | 3 Jam (Hour)                  |           |                       |
| GRAND TOTAL                             | 122 Jam (Hour)   |           |                       |  |           |                       |  |           |                       |                               |           |                       |
| TOTAL CREDIT (SKS)                      | 122 Jam : 40 = 3,05<br>3<br>(European Standard Formula. ekuivalen dencan3 SKS) |           |                       |  |           |                       |  |           |                       |                               |           |                       |

## H. Kriteria, Indikator dan Bobot Penilaian

*Criteria, Indicators and Assessment Weights*

### 1. Indikator

*Indicator*

| No | Ketercapaian CPMK/LO<br><i>Learning Outcomes Achievement</i> | KPI Minimum<br><i>Minimum of Key Performance Indicator</i> |
|----|--|--|
| 1  | Ketercapaian LO1 (UTS) / LO1 Achievement                     | $\geq 60\%$  |
| 2  | Ketercapaian LO2 (UTS) / LO2 Achievement                     | $\geq 60\%$  |
| 3  | Ketercapaian LO3 (UAS) / LO3 Achievement                     | $\geq 60\%$  |
| 4  | Ketercapaian LO4 (UAS) / LO4 Achievement                     | $\geq 60\%$  |

### 2. Bobot Penilaian

*Assessment Weights*

| No | Indikator<br><i>Indicator</i> | Bobot<br><i>Weight</i> |
|----|-------------------------------|------------------------|
|----|-------------------------------|------------------------|

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|--------------|--|-------------|
| 1            | Kehadiran / <i>presence</i>                                      | 10 %        |
| 2            | Quiz setiap sesi / <i>Quiz each session</i>                      | 15 %        |
| 3            | Tugas diskusi setiap sesi / <i>Discussion Tasks Each Session</i> | 20 %        |
| 4            | Ujian Tengah Semester (UTS)<br>(Nilai LO1+LO2) / 2               | 25%         |
| 5            | Ujian Akhir Semester (UAS)<br>(Nilai LO3+LO4) / 2                | 30%         |
| 6            | Tugas Project (Penelitian-Pengabdian)                            | ... %       |
| <b>Total</b> |  | <b>100%</b> |

### 3. Kriteria

#### Criteria

| Nilai       | Mutu | Grade |
|-------------|------|-------|
| 85,00-100   | 4    | A     |
| 73,00-84,99 | 3    | B     |
| 55,00-72,99 | 2    | C     |
| 45,00-54,99 | 1    | D     |
| 0,00-44,99  | 0    | E     |

### G. Referensi

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

### H. Detail RPS dan Satuan Acara Perkuliahan (SAP)

| Sesi dan Jadwal            | Bahan Kajian /Konten perkuliahan  | Kemampuan akhir yang dicapai setiap sesi   | Satuan Acara Perkuliahan  |
|----------------------------|---|--|---|
| Sesi 1<br><i>Session 1</i> | <p>Konsep Logika<br/><i>Concept of Logic</i></p> <ul style="list-style-type: none"> <li>• Silabus Perkuliahan</li> <li>• Definisi Logika</li> <li>• Proposisi dan Argumen</li> <li>• Mengenali Argumen</li> <li>• Argumen dan Penjelasan</li> <li>• Argumen Deduktif dan Induktif</li> </ul> <p>• <i>Syllabus</i><br/>• <i>Logic Definition</i></p> | <ul style="list-style-type: none"> <li>• Menjelaskan definisi dari logika, proposisi dan argument.</li> <li>• Membedakan proposisi dan argument.</li> <li>• Membedakan argument deduktif dan induktif</li> </ul> <p>• <i>Explain the definitions of logic, propositions and arguments.</i></p> | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal: Pengenalan CL)</p> <p>Materi Perkuliahan</p> <p>Kegiatan Inti: pemaparan Materi, study case. (PBL)</p> <p>Kegiatan Akhir: Evaluasi Materi dan tanya jawab.</p> |



|                     |   |  |  |
|---------------------|---|--|--|
|                     | <ul style="list-style-type: none"> <li>• <i>Propositions and Arguments</i></li> <li>• <i>Recognizing Arguments</i></li> <li>• <i>Arguments and Explanations</i></li> <li>• <i>Deductive and Inductive Arguments</i></li> </ul>  | <ul style="list-style-type: none"> <li>• <i>Distinguish between propositions and arguments.</i></li> <li>• <i>Distinguish deductive and inductive arguments</i></li> </ul>   | <p><i>Learning Method: Offline</i><br/><i>Preliminary Activity: Introduction CL)</i><br/><i>Lecture Material</i><br/><i>Core Activities: material presentation, study case. (PBL)</i><br/><i>Final Activity: Material Evaluation and questions and answers.</i></p>  |
| Sesi 2<br>Session 2 | <p>Logika Proposisi dan Predikat<br/><i>Logic of Propositions and Predicates</i></p> <ul style="list-style-type: none"> <li>• Definisi Proposisi dan Kalimat</li> <li>• Notasi</li> <li>• Interpretasi</li> <li>• Aturan Semantik</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Definitions of Propositions and Sentences</i></li> <li>• <i>Notation</i></li> <li>• <i>Interpretation</i></li> <li>• <i>Semantic Rules</i></li> </ul> | <ul style="list-style-type: none"> <li>• Menjelaskan definisi proposisi dan kalimat.</li> <li>• Memberikan notasi yang tepat pada pernyataan.</li> <li>• Mengubah pernyataan dengan metode interpretasi.</li> <li>• Menjelaskan aturan semantic.</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Explain the definition of propositions and sentences.</i></li> <li>○ <i>Give proper notation to statements.</i></li> <li>○ <i>Changing statements with interpretation methods.</i></li> <li>○ <i>Explain semantic rules.</i></li> </ul> | <p>Metode Pembelajaran : <b>Offline– Learning</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video<br/>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Offline– Learning</i><br/><i>Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p> |
| Sesi 3<br>Session 3 | <p>Proposisi Majemuk<br/><i>Compound Proposition</i></p> <ul style="list-style-type: none"> <li>• Logika Proposisi</li> <li>• Analisa Proposisi Majemuk</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Compound Proposition</i></li> <li>• <i>Compound Proposition Analysis</i></li> <li>•</li> </ul>  | <ul style="list-style-type: none"> <li>• Menerapkan konsep proposisi majemuk, Analisa terhadap proposisi majemuk</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Applying the concept of compound propositions, analysis of compound propositions</i></li> </ul>   | <p>Metode Pembelajaran : <b>offline</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video<br/>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Offline– Learning</i><br/><i>Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p>           |





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| <p>Sesi 4<br/>Session 4</p> | <p>Ingkaran Pernyataan<br/><i>Negation of Statements</i></p> <ul style="list-style-type: none"> <li>• Negasi Pada Konjungsi</li> <li>• Negasi Pada Disjungsi</li> <li>• Negasi Pada Implikasi</li> <li>• Negasi pada Biimplikasi</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Negation of Conjunctions</i></li> <li>• <i>Negation of Disjunction</i></li> <li>• <i>Negation of Implications</i></li> <li>• <i>Negation of Biimplication</i></li> </ul>  | <ul style="list-style-type: none"> <li>• Menerapkan konsep negasi pada konjungsi, Disjungsi, Implikasi dan Biimplikasi</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Applying the concept of negation to conjunctions, disjunctions, implication and biimplication</i></li> </ul>  | <p>Metode Pembelajaran : <b>offline</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video<br/>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Offline– Learning</i><br/><i>Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p> |
| <p>Sesi 5<br/>Session 5</p> | <p>Tautologi, Kontradiksi dan Contingent<br/>Konvers, Invers dan Kontraposisi</p> <ul style="list-style-type: none"> <li>• Definisi Konvers, Invers dan Kontraposisi</li> <li>• Contoh Konvers, Invers dan Kontraposisi</li> <li>• Ingkaran pada Konvers, Invers dan Kontraposisi</li> </ul><br><p><i>Tautology, Contradiction and Contingent</i><br/><i>Converse, Inverse and Contraposition</i></p> <ul style="list-style-type: none"> <li>• <i>Definition of Converse, Inverse and Contraposition</i></li> <li>• <i>Example of Converse, Inverse and Contraposition</i></li> <li>• <i>Negation of Converse, Inverse and Contraposition</i></li> </ul> | <ul style="list-style-type: none"> <li>• Menjelaskan konsep Tautologi, Kontradiksi dan contingent.</li> <li>• Menyelesaikan tugas dengan menerapkan konsep tautologi, kontradiksi dan contingent.</li> <li>• Menjelaskan definisi Konvers, Invers dan Kontraposisi</li> <li>• Menerapkan negasi pada Konvers, Invers dan Kontraposisi</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Explain the concept of tautology, Contradictory and contingent.</i></li> <li>• <i>Complete tasks by applying tautology, contradiction and contingent concepts.</i></li> <li>• <i>Explaining the definition of Converse, Inverse and Contraposition</i></li> <li>• <i>Apply negation to Converse, Inverse and Contraposition</i></li> </ul> | <p>Metode Pembelajaran : <b>Offline</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video<br/>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Offline– Learning</i><br/><i>Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p> |



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| <p>Sesi 6<br/>Session 6</p>                                  | <p>Ekuivalensi Logika<br/><i>Logical Equivalence</i></p> <ul style="list-style-type: none"> <li>• Definisi Ekuivalensi Logika</li> <li>• Contoh Ekuivalensi Logika</li> <li>• Hukum Ekuivalensi Logika</li> <li>• Penyederhanaan Logika</li> <li>• <i>Definition of Logical Equivalence</i></li> <li>• <i>Examples of Logical Equivalence</i></li> <li>• <i>Law of Logical Equivalence</i></li> <li>• <i>Logic Simplification</i></li> </ul> | <ul style="list-style-type: none"> <li>• Menjelaskan definisi ekuivalensi logika.</li> <li>• Menerapkan hukum ekuivalensi logika.</li> <li>• Menerapkan konsep penyederhanaan logika</li> <li>• <i>Explain the definition of logical equivalence.</i></li> <li>• <i>Apply the law of logical equivalence.</i></li> <li>• <i>Applying the concept of logic simplification</i></li> </ul> | <p>Metode Pembelajaran : <b>Offline</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video<br/>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Offline– Learning</i><br/><i>Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments</i></p> |
| <p>Sesi 7<br/>Session 7</p>                                  | <p>Inferensi Logika<br/><i>Logical Inference</i></p> <ul style="list-style-type: none"> <li>• Argumen valid dan invalid</li> <li>• Metode Inferensi</li> <li>• Dilema</li> <li>• <i>Valid and invalid arguments</i></li> <li>• <i>Inference method</i></li> <li>• <i>Dilemma</i></li> </ul>  | <ul style="list-style-type: none"> <li>• Menjelaskan Argumen valid dan invalid</li> <li>• Menerapkan Metode Inferensi pada pernyataan</li> <li>• Menjelaskan konsep Dilema</li> <li>• <i>Explain valid and invalid arguments</i></li> <li>• <i>Apply the Inference Method to statements</i></li> <li>• <i>Explain the Dilemma concept</i></li> </ul>                                    | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal dan Inti: pemaparan Materi, study case. (PBL), Resume materi<br/>Persiapan ujian<br/>Kegiatan Akhir: Evaluasi Materi dan tanya jawab. (SCL)</p> <p><i>Learning Method: Offline Initial and Core Activities: Material presentation, study case. (PBL), Exam preparation material resume</i><br/><i>Final Activity: Material Evaluation and questions and answers. (SCL)</i></p>  |
| <p>Sesi 8</p> <p><b>Masa UJIAN TENGAH SEMESTER (UTS)</b></p> |  |   |   |
| <p>Sesi 9<br/>Session 9</p>                                  | <p>Kalimat Berkuantor<br/><i>Quantifier Sentence</i></p> <ul style="list-style-type: none"> <li>• Kuantor Universal</li> <li>• Kuantor Eksistensial</li> <li>• Ingkaran kalimat Berkuantor</li> </ul>  | <ul style="list-style-type: none"> <li>• Menjelaskan perbedaan kuantor universal dan eksistensial.</li> <li>• Menerapkan konsep negasi pada kuantor universal dan eksistensial.</li> </ul>  | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video</p>   |



|                               |  |  |  |
|-------------------------------|--|--|--|
|                               | <ul style="list-style-type: none"> <li>• <i>Universal Quantifier</i></li> <li>• <i>Existential Quantifier</i></li> <li>• <i>Negation of quantifiable sentence</i></li> </ul>   | <ul style="list-style-type: none"> <li>• <i>Explain the difference between universal and existential quantifiers.</i></li> <li>○ <i>Applying the concept of negation to universal and existential quantifiers</i></li> </ul>   | <p>Kegiatan Akhir: Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Face to Face</i><br/><i>Initial &amp; Core Activities: Independent Learning</i><br/><i>Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p>  |
| <p>Sesi 10<br/>Session 10</p> | <p>Gerbang Logika<br/><i>Logic Gates</i></p> <ul style="list-style-type: none"> <li>• Definisi Gerbang Logika</li> <li>• Jenis Gerbang Logika</li> <li>• Peta Karnaugh</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Definition of Logic Gates</i></li> <li>• <i>Types of Logic Gates</i></li> <li>• <i>Karnaugh Map</i></li> </ul>  | <ul style="list-style-type: none"> <li>• Menerapkan konsep gerbang logika pada penyelesaian soal.</li> <li>• Menerapkan konsep Peta Karnaugh.</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Applying the concept of logic gates in problem solving.</i></li> <li>○ <i>Implementing the Karnaugh Map concept</i></li> </ul> | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video</p> <p>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Face to Face</i><br/><i>Initial &amp; Core Activities: Independent Learning</i><br/><i>Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p> |
| <p>Sesi 11<br/>Session 11</p> | <p>Pembuktian Validitas Argumen</p> <ul style="list-style-type: none"> <li>• Pohon Semantik</li> <li>• Pembuktian Validitas dengan Falsifikasi</li> <li>• Pembuktian Validitas dengan strategi pembalikan</li> </ul><br><p><i>Proving the validity of the argument</i></p> <ul style="list-style-type: none"> <li>• <i>Semantic Trees</i></li> <li>• <i>Proving Validity by Falsification</i></li> <li>• <i>Proving Validity with reversal strategies</i></li> </ul> | <ul style="list-style-type: none"> <li>• Menerapkan konsep pembuktian validitas sebuah argument.</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Apply the concept of proving the validity of an argument.</i></li> </ul>  | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video</p> <p>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p> <p><i>Learning Method: Face to Face</i><br/><i>Initial &amp; Core Activities: Independent Learning</i><br/><i>Experience through Lecturer Notes, PPT, &amp; Video content</i><br/><i>Final Activity: Evaluation through quizzes and assignments, as well</i></p>  |



|                       |  |   |  |
|-----------------------|--|---|--|
|                       | •  |   | as providing feedback and assessment of assignments.   |
| Sesi 12<br>Session 12 | <p>Tablo Semantik</p> <ul style="list-style-type: none"> <li>• Aturan Tablo Semantik</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Semantic Tableau</i> <ul style="list-style-type: none"> <li>○ Rules of semantic tableau</li> </ul> </li> </ul>          | <ul style="list-style-type: none"> <li>○ Menerapkan aturan tablo semantic untuk membuktikan validitas argument.</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Apply semantic tableau rules to prove the validity of arguments.</i></li> </ul> | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video</p> <p>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p><br><p><i>Learning Method: Face to Face Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p> |
| Sesi 13<br>Session 13 | <p>Substitusi</p> <p><i>Substitution</i></p> <ul style="list-style-type: none"> <li>• Substitusi Tunggal</li> <li>• Substitusi Multi</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Single Substitution</i></li> <li>• <i>Multi Substitution</i></li> </ul> | <ul style="list-style-type: none"> <li>• Menjelaskan konsep substitusi Tunggal dan multi.</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Explain the concept of single and multi-substitution.</i></li> </ul>                                  | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video</p> <p>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p><br><p><i>Learning Method: Face to Face Initial &amp; Core Activities: Independent Learning Experience through Lecturer Notes, PPT, &amp; Video content Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i></p> |
| Sesi 14<br>Session 14 | <p>First Order Logic</p> <p><i>First Order Logic</i></p> <ul style="list-style-type: none"> <li>• Konsep Dasar</li> <li>• Formalisasi FOL</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Basic concepts</i></li> <li>• <i>FOL formalization</i></li> </ul>  | <ul style="list-style-type: none"> <li>• Menjelaskan konsep dasar first order logic dan formalisasi FOL</li> </ul><br><ul style="list-style-type: none"> <li>• <i>Explain the basic concept of first order logic and FOL formalization</i></li> </ul>     | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal &amp; Inti :<br/>Pengalaman Belajar Mandiri melalui konten Lecturer Notes, PPT, &amp; Video</p> <p>Kegiatan Akhir : Evaluasi melalui quiz dan tugas, serta melakukan <i>feedback</i> dan penilaian terhadap tugas.</p><br><p><i>Learning Method: Face to Face Initial &amp; Core Activities: Independent Learning</i></p>  |



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|  |  |   | <i>Experience through Lecturer Notes, PPT, &amp; Video content</i><br><i>Final Activity: Evaluation through quizzes and assignments, as well as providing feedback and assessment of assignments.</i>   |
| Sesi 15<br><i>Session 15</i>           | Latihan - Analisa Logika Matematika<br><i>Mathematic Logic Analysis- Exercises</i> | <ul style="list-style-type: none"> <li>• Menerapkan Analisa logika matematika pada penyelesaian soal.</li> <li>• <i>Implementing mathematical logic analysis to solve question</i></li> </ul> | <p>Metode Pembelajaran : <b>Tatap Muka</b></p> <p>Kegiatan Awal dan Inti: pemaparan Materi, study case. (PBL), Resume materi<br/>Persiapan ujian<br/>Kegiatan Akhir: Evaluasi Materi dan tanya jawab. (SCL)</p> <p><i>Learning Method: Offline</i><br/><i>Initial and Core Activities: Material presentation, study case. (PBL), Exam preparation material resume</i><br/><i>Final Activity: Material Evaluation and questions and answers. (SCL)</i></p> |
| Sesi 16                                |  |   |   |
| Masa <b>UJIAN AKHIR SEMESTER (UAS)</b> |  |   |   |
| <b>REMEDIAL PERBAIKAN</b>              |  |   |   |

### I. Matriks LO dan PO

| No | Capaian Pembelajaran Mata Kuliah (CPMK)/ <i>Learning Outcomes (LO)</i>  | PROGRAM LEARNING OUTCOMES (PLO) |   |   |   |   |   |   |   |   |    |    |    |
|----|---|---------------------------------|---|---|---|---|---|---|---|---|----|----|----|
|    |   | 1                               | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1  | <p>Mahasiswa mampu menerapkan konsep-konsep logika proposisi dan predikat untuk menyelesaikan tugas.</p> <p><i>Students are able to apply propositional and predicate logic concepts to complete assignments.</i></p> |                                 |   |   |   | V |   |   |   |   |    |    |    |
| 2  | <p>Mahasiswa mampu menerapkan konsep-konsep konvers, invers dan kontraposisi, Ekuivalensi Logika serta Inferensi Logika untuk menyelesaikan tugas.</p>  |                                 |   |   |   |   | V |   |   |   |    |    |    |



|   |  |  |  |  |  |  |  |   |   |  |  |  |  |  |
|---|--|--|--|--|--|--|--|---|---|--|--|--|--|--|
|   | Students are able to apply the concepts of conversion, inverse and contraposition, Logical Equivalence and Logical Inference to complete assignments.  |  |  |  |  |  |  |   |   |  |  |  |  |  |
| 3 | Mahasiswa mampu menerapkan konsep gerbang logika, serta pembuktian validitas argument pada penyelesaian tugas.<br><br>Students are able to apply the concept of logic gates, as well as prove the validity of arguments in completing assignments. |  |  |  |  |  |  | V |   |  |  |  |  |  |
| 4 | Mahasiswa mampu menganalisa konsep first order logic pada penyelesaian tugas.<br><br>Students are able to analyze the concept of first order logic in completing assignments.  |  |  |  |  |  |  |   | V |  |  |  |  |  |

Note :

Capaian Pembelajaran Lulusan (CPL) / Program Learning Outcome (PLO) Program Studi S1 Teknik Informatika

| Kode Code | Capaian Pembelajaran Lulusan (CPL)<br>Program Outcomes (PO)  |
|-----------|--|
| PLO1      | Bertakwa Kepada Tuhan Yang Maha Esa, menunjukkan sikap religius, menjunjung tinggi nilai kemanusiaan dalam menjalankan tugas berdasarkan moral dan etika, menghargai keanekaragaman budaya dan taat hukum dalam kehidupan bermasyarakat berbangsa, bernegara sesuai dengan Pancasila dan Trilogi Nusa Putra.<br><br><i>Fearing God Almighty, showing religious attitude, upholding human values in carrying out duties based on morals and ethics, respecting cultural diversity and obeying the law in the life of a nation-state society in accordance with Pancasila and the Nusa Putra Trilogy</i> |
| PLO2      | Mampu mengambil keputusan secara tepat dalam konteks pemanfaatan potensi serta penyelesaian masalah pada bidang keahlian dan bisnis dilandasi dengan semangat kewirausahaan.<br><br><i>Able to make the right decisions in the context of exploiting potential and solving problems in areas of expertise and business based on an entrepreneurial spirit.</i>   |
| PLO3      | Memiliki pengetahuan yang memadai terkait cara kerja sistem komputer dan mampu menerapkan/menggunakan berbagai algoritma/metode untuk memecahkan masalah pada suatu organisasi.<br><br><i>Have adequate knowledge regarding how computer systems work and be able to apply/use various algorithms/methods to solve problems in an organization.</i>  |
| PLO4      | Memiliki kompetensi untuk menganalisis persoalan computing yang kompleks untuk mengidentifikasi solusi pengelolaan proyek teknologi bidang informatika/ilmu komputer dengan mempertimbangkan wawasan perkembangan ilmu transdisiplin.<br><br><i>Have the competence to analyze complex computing problems to identify solutions for managing technology projects in the field of informatics/computer science by considering the insights of transdisciplinary science developments</i>  |



|       |  |
|-------|--|
| PLO5  | <p>Menguasai konsep teoritis bidang pengetahuan Ilmu Komputer/Informatika dalam mendesain dan mensimulasikan aplikasi teknologi multi-platform yang relevan dengan kebutuhan industri dan masyarakat.</p> <p><i>Mastering theoretical concepts in the field of Computer Science/Informatics knowledge in designing and simulating multi-platform technology applications that are relevant to the needs of industry and society.</i></p>   |
| PLO6  | <p>Mampu menerapkan pemikiran logis, kritis, sistematis, dan inovatif dalam konteks pengembangan atau implementasi ilmu pengetahuan dan teknologi yang memperhatikan dan menerapkan nilai humaniora yang sesuai dengan bidang keahliannya;</p> <p><i>Able to apply logical, critical, systematic and innovative thinking in the context of the development or implementation of science and technology that pays attention to and applies the values of the humanities in accordance with their field of expertise;</i></p>  |
| PLO7  | <p>Mampu mengambil keputusan secara tepat dalam konteks penyelesaian masalah di bidang keahliannya, berdasarkan hasil analisis informasi dan data;</p> <p><i>Able to make decisions appropriately in the context of solving problems in the field expertise, based on the results of information and data analysis;</i></p>  |
| PLO8  | <p>Kemampuan mengimplementasi kebutuhan computing dengan mempertimbangkan berbagai metode/algoritma yang sesuai.</p> <p><i>Ability to implement computing requirements by considering appropriate methods/algorithms.</i></p>  |
| PLO9  | <p>Kemampuan menganalisis, merancang, membuat dan mengevaluasi user interface dan aplikasi interaktif dengan mempertimbangkan kebutuhan pengguna dan perkembangan ilmu transdisiplin.</p> <p><i>Ability to analyze, design, create and evaluate user interfaces and interactive applications taking into account user needs and developments in transdisciplinary science.</i></p>   |
| PLO10 | <p>Kemampuan mendesain, mengimplementasi dan mengevaluasi solusi berbasis computing multi-platform yang memenuhi kebutuhan-kebutuhan computing pada sebuah organisasi.</p> <p><i>Ability to design, implement and evaluate multi-platform computing solutions that meet the computing needs of an organization.</i></p>  |
| PLO11 | <p>Mampu mengenali kebutuhan, dan memiliki persiapan serta kemampuan untuk terlibat dalam pembelajaran mandiri dan sepanjang hayat dalam konteks pengembangan wawasan dan pengalaman melalui kegiatan magang, riset, pertukaran pelajar, proyek kemanusiaan, studi proyek mandiri, wirausaha, mengajar, pengembangan desa dan bela negara.</p> <p><i>Be able to recognize needs, and have the preparation and ability to engage in them independent and lifelong learning in the context of developing insights and experiences through internships, research, student exchanges, humanitarian projects, independent study projects, entrepreneurship, teaching, village development and national defense.</i></p> |

### PERSETUJUAN/APPROVAL

| Item  | Paraf Ketua Program Studi |
|---|---------------------------|
| Capaian Pembelajaran Mata Kuliah (CPMK/LO)                    | .....                     |
| Waktu pembelajaran Siswa / <i>Student Learning Time (SLT)</i> |                           |
| Detail Rencana Pembelajaran Semester dan SAP                  |                           |
| Kriteria, Indikator dan Bobot Penilaian                       |                           |
| Perbaikan Mutu Berkesinambungan (CQI)                         |                           |



— UNIVERSITAS —  
**Nusa Putra**

03.00/CDU/FRM

**RPS dibuat oleh:**

**RPS disetujui oleh :**

.....  
**Nama : Gina Purnama Insany, M.Kom**  
**Jabatan : Dosen**  
**Tanggal : 5 September 2023**

.....  
**Ketua Program Studi Teknik Informatika**  
**Nama : Anggun Fergina, M.Kom**  
**Tanggal :**

**MONITORING DAN**

**EVALUASI PEMBELAJARAN**

| Item   | Paraf oleh Dosen Pengampu |
|--|---------------------------|
| Materi sudah tersampaikan dengan baik sesuai Silabus dan RPS                 |                           |
| Mahasiswa diberikan masukan untuk peningkatan penguasaan materi perkuliahan. |                           |

Komentar dosen : .....

Diperiksa Oleh :

Anggun Fergina, M.Kom  
Ketua Program Studi  
Tanggal :

**MONITORING DAN EVALUASI PEMBELAJARAN**  
**SETELAH UJIAN AKHIR SEMESTER (UAS)**

Komentar dosen atas keseluruhan penyampaian perkuliahan :

.....  
.....  
.....

Diperiksa Oleh :

Mengetahui

Anggun Fergina, M.Kom  
Ketua Program Studi  
Tanggal :

.....  
Dekan/Wakil Rektor 1 ARCI

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**Nusa Putra**

03.00/CDU/FRM

**LITTLE  
STEP  
— FOR —  
WIDE  
VISION**

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