1. **RENCANA PEMBELAJARAN SEMESTER (RPS) BERDASARKAN PERMENRISTEKDIKTI NO. 44/2015 SNPT PASAL 12**

**RENCANA PEMBELAJARAN SEMESTER**

| MATA KULIAH | : | Deep Learning |
| --- | --- | --- |
| SKS | : | 3 |
| KODE | : | 1984410 |
| PROGRAM STUDI | : | Magister INFORMATIKA |
| SEMESTER | : | 2 |
| NAMA DOSEN PENGAMPU | : |  |
| COURSE LEARNING OUTCOMES  (Capaian Pembelajaran Mata Kuliah) | : | 1. Students are able to understand and explain the concepts of deep learning. 2. Students are able to understand and master using python for deep learning and data science. 3. Students are able to understand and master deep learning using *jupyter*. 4. Students are able to understand and master the concepts of neural network. 5. Students are able to understand and master the concepts of probability and statistic. 6. Students are able to master machine learning problems and statistical environment layers. |

| Minggu Ke- | Kemampuan yang Diharapkan pada Setiap Pertemuan | Bahan Kajian | Metode Pembelajaran | Waktu Belajar (Menit) | Pengalaman Belajar Mahasiswa  (Deskripsi Tugas) | Kriteria, Indikator dan Bobot Penilaian | Daftar Referensi yang digunakan |
| --- | --- | --- | --- | --- | --- | --- | --- |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Ke-1 | Mampu memahami dan menjelaskan konsep dasar *deep learning* | *introduction to deep learning* | Daring | 3 x 50 menit | memahami dan menjelaskan konsep dasar *deep learning* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-2 | Mahasiswa mampu memahami dan berlatih instalasi *software* pendukung *deep learning* | *how to get started with python for deep learning and data science* | Daring | 3 x 50 menit | memahami dan berlatih instalasi *software* pendukung *deep learning* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-3 | Mahasiswa mampu memahami dan berlatih *deep learning* menggunakan *jupyter* | *deep learning* menggunakan *jupyter* | Daring | 3 x 50 menit | memahami dan berlatih *deep learning* menggunakan *jupyter* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-4 | Mahasiswa mampu memahami dan berlatih dasar *neural network* | dasar *neural network* | Daring | 3 x 50 menit | memahami dan berlatih dasar *neural network* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-5 | Mahasiswa mampu memahami dan berlatih *probability & statistic* | *probability and statistic* | Daring | 3 x 50 menit | memahami dan berlatih *probability & statistic* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-6 | Mahasiswa mampu memahami dan berlatih *gradients*, *chain rule*, *automatic differentiation* | *gradients, chain rule, automatic differentiation* | Daring | 3 x 50 menit | memahami dan berlatih *gradients*, *chain rule*, *automatic differentiation* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-7 | Mahasiswa mampu memahami dan berlatih *linear regression*, *basic optimization and likelihood*, *loss functions*, *logisitic regression*, *information theory* | *linear regression, basic optimization and likelihood, loss functions, logisitic regression, information theory* | Daring | 3 x 50 menit | memahami dan berlatih *linear regression*, *basic optimization and likelihood*, *loss functions*, *logisitic regression*, *information theory* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-8 | **UJIAN TENGAH SEMESTER (UTS)** | | | | | | |
| Ke-9 | Mahasiswa mampu memahami dan berlatih *multilayer perceptron model selection, weight decay, dropout numerical stability, hardware* | *multilayer perceptron model selection, weight decay, dropout numerical stability, hardware* | Daring | 3 x 50 menit | memahami dan berlatih *multilayer perceptron model selection, weight decay, dropout numerical stability, hardware* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-10 | Mahasiswa mampu memahami dan berlatih *machine learning problems and statistical environment layers*, *parameters*, *gpus convolutional networks* | *machine learning problems and statistical environment layers, parameters, gpus convolutional networks* | Daring | 3 x 50 menit | memahami dan berlatih *machine learning problems and statistical environment layers*, *parameters*, *gpus convolutional networks* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-11 | Mahasiswa mampu memahami dan berlatih pelajari dan terjemahkan *basic convolutional networks residual networks and advanced architectures computation P* | *basic convolutional networks residual networks and advanced architectures computa-tion performance, multi-gpu and multimachine training image augmentation, fine turning, neural style* | Daring | 3 x 50 menit | memahami dan berlatih pelajari dan terjemahkan *basic convolutional networks residual networks and advanced architectures computation P* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-12 | Mahasiswa mampu memahami dan berlatih dan menterjemahkan *object detection sequence models and language recurrent neural networks advanced sequence models* | *object detection sequence models and language recurrent neural networks advanced sequence models* | Daring | 3 x 50 menit | memahami dan berlatih dan menterjemahkan *object detection sequence models and language recurrent neural networks advanced sequence models* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-13 | Mahasiswa mampu memahami dan berlatih *word2vec*, *fasttext*, *glove*, *sentiment analysis encoder decoder, seq2seq, machine translation attention, transfor* | *word2vec, fasttext, glove, sentiment analysis encoder-decoder, seq2seq, machine translation attention, transformer, bert convex optimization, convergence rate momentum, adagrad, rmsprop, adam* | Daring | 3 x 50 menit | memahami dan berlatih *word2vec*, *fasttext*, *glove*, *sentiment analysis encoder decoder, seq2seq, machine translation attention, transfor* | Tugas, penyelesaian soal/studi kasus di kelas | https://courses.d2l.ai/berkeley-stat-157/index.html |
| Ke-14 | Mahasiswa mampu mengimplementasikan dan mengembangkan program aplikasi yang didasarkan dari ide atau gagasan tentang tentang *deep learning* untuk kontribusi di bidang *deep learning* | project akhir program aplikasi *deep learning* | Daring | 3 x 50 menit | mengimplementasikan dan mengembangkan program aplikasi yang didasarkan dari ide atau gagasan tentang tentang *deep learning* untuk kontribusi di bidang *deep learning* | Tugas, penyelesaian soal/studi kasus di kelas | - |
| Ke-15 | Mahasiswa mampu mengimplementasikan dan mengembangkan program aplikasi yang didasarkan dari ide atau gagasan tentang *deep learning* untuk kontribusi di bidang *deep learning* | akhir final *deep learning* | Daring | 3 x 50 menit | mengimplementasikan dan mengembangkan program aplikasi yang didasarkan dari ide atau gagasan tentang *deep learning* untuk kontribusi di bidang *deep learning* | Tugas, penyelesaian soal/studi kasus di kelas | - |
| Ke-16 | **UJIAN AKHIR SEMESTER (UAS)** | | | | | | |

**Malang, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Dosen Pengampu Mata Kuliah**

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