INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FAKULTAS TEKNOLOGI ELEKTRO DAN INFORMATIKA CERDAS
DEPARTEMEN TEKNIK ELEKTRO
Program Studi Sarjana (S1) Teknik Elektro

INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FACULTY OF INTELLIGENT ELECTRICAL & INFORMATICS TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING
Bachelor Degree Program in Electrical Engineering

1	**Nama Mata Kuliah / *Course Name***	:	Dasar Pemrograman / Basic Progamming
2	**Kode Mata Kuliah / *Course Code***	:	EC234101
3	**Kredit / *Credits***	:	3 SKS
4	**Semester / *Semester***	:	1

Deskripsi Mata Kuliah / *Course Description*

Pada mata kuliah ini, mahasiswa akan mempelajari pengetahuan dasar pemrograman , konsep algoritma, pemprograman tersetruktur, runtunan, pengulangan, pemilihan, fungsi, tipe data, konsep struktur dan file. / *In this course, students will learn the fundamental knowledge of programming, algorithm concepts, structured programming, sequences, loops, conditionals, functions, data types, and the concepts of data structures and file handling.*

Capaian Pembelajaran Lulusan (CPL) Yang Dibebankan Mata Kuliah / *Program Learning Outcomes Charged to The Course*

CPL 2 Mampu mengkaji dan memanfaatkan ilmu pengetahuan dan teknologi dalam rangka mengaplikasikannya pada bidang teknik elektro, serta mampu mengambil keputusan secara tepat dari hasil kerja sendiri maupun kerja kelompok dalam bentuk laporan tugas akhir atau bentuk kegiatan pembelajaran lain yang luarannya setara dengan tugas akhir melalui pemikiran logis, kritis, sistematis dan inovatif */ Able to examine and utilize knowledge and technology for the purpose of applying them in the field of electrical engineering, and making informed decisions based on individual work as well as group work in the form of final reports or other learning activities whose outcomes are equivalent to final projects, through logical, critical, systematic, and innovative thinking.*

CPL 3 Mampu mengelola pembelajaran diri sendiri, dan mengembangkan diri sebagai pribadi pembelajar sepanjang hayat untuk bersaing di tingkat nasional, maupun internasional, dalam rangka berkontribusi nyata untuk menyelesaikan masalah

dengan mengimplementasikan teknologi informasi dan komunikasi dan memperhatikan prinsip keberlanjutan serta memahami kewirausahaan berbasis teknologi / *Able to manage one's own learning and continually self-develop as a lifelong learner to compete at the national and international levels, with the goal of making a tangible contribution to problem-solving by implementing information and communication technology and considering sustainability principles, as well as understanding technology-based entrepreneurship.*

Capaian Pembelajaran Mata Kuliah / *Course Learning Outcomes*

1. Mahasiswa memahami konsep kerja suatu sistem computer. / *Students understand the functioning concept of a computer system.*
2. Mahasiswa memahami konsep bilangan. / *Students understand the concept of numbers.*
3. Memahami konsep ekspresi, operand, operator logika, operator aritmetika. / *Understand the concepts of expressions, operands, logical operators, and arithmetic operators.*
4. Mahasiswa memahami konsep algoritma. / *Students understand the concept of algorithms.*
5. Mahasiswa mampu mengkonversikan Algoritma. / *Students are able to convert algorithms.*
6. Mahasiswa mampu menyelesaikan persoalan tertentu dengan menggunakan bahasa pemprograman C. / *Students are capable of solving specific problems using the C programming language*.
7. Mahasiswa mampu membuat fungsi. / *Students are able to create functions.*
8. Mahasiswa memahami konsep struktur/ record dan penyimpanannya dalam file. / *Students understand the concept of structures/records and their storage in files.*

Pokok Bahasan / *Contents*

1. Sejarah komputer / *The history of computer*
2. Sistem komputer / *Computer system*
3. Sistem bilangan / *Numerical system*
4. Ekspresi, operand dan operator / *Expression, operand, and operator*
5. Algoritma komputer, runtunan, pengulangan dan pemilihan / *computer algorithm, sequence, looping, and selecting*
6. Bahasa pemrograman C / *C programming language*
7. Tipe data dan struktur / *Data type and its structure*
8. Array / Array
9. Pengurutan data / *Data Sorting*
10. Barisan dan deret / *Sequence and series*

Prasyarat / *Pre-requisite*

Pustaka / *Reference*

1. Discovering Computers: Fundamentals, Fifth Edition (Shelly Cashman Series) by Gary B. Shelly and Misty E. Vermaat

2. Fundamentals of Computer Algorithms by Ellis and Sartaj Sahni Horowitz
3. Introduction to Algorithms, Second Edition by Thomas H. Cormen Programming in ANSI C by Stephen G. Kochan