

MATRIKS TUGAS MEMBACA MINGGUAN (*WEEKLY READING ASSIGNMENTS*)

MATAKULIAH SISTEM DIGITAL (TIF-1106) — 3 SKS

Integrasi 3 Sumber Teks Terbuka (*Open Educational Resources*) S1 Teknik Informatika

Tim Dosen Teknik Informatika

Program Studi S1 Teknik Informatika — Fakultas Teknik

Semester Ganjil 2026/2027

PANDUAN LITERASI & TUGAS MEMBACA WAJIB MAHASISWA

Seluruh mahasiswa wajib membaca bab referensi yang ditentukan sebelum menghadiri perkuliahan teori dan sesi praktikum laboratorium setiap minggunya.

Daftar 3 Buku Referensi Utama Terbuka (OER)

Seluruh berkas PDF buku referensi tersedia secara gratis dan tersimpan di repositori perkuliahan ([buku_referensi_pdf/](#)):

1. [Ref 1] **Kuphaldt (2024)**: *Lessons In Electric Circuits, Volume IV – Digital*. Tony R. Kuphaldt (3.5 MB, Design Science License). Berkas: `Lessons_In_Electric_Circuits_Vol4_Digital_Kuphaldt.pdf`
2. [Ref 2] **Coulston (2020)**: *Digital Design: A Datapath and Control*. Prof. Coulston, McGraw-Hill OER (6.9 MB). Berkas: `Digital_Design_Textbook_Coulston.pdf`
3. [Ref 3] **Coulston Labs (2020)**: *Digital Design Laboratory Manual*. Prof. Coulston, McGraw-Hill OER (12.0 MB). Berkas: `Digital_Design_Labs_Coulston.pdf`

Matriks Integrasi Tugas Membaca Minggu 1 s.d. 15

Mg	Topik Perkuliahan	Ref 1: Kuphaldt	Ref 2: Coulston	Ref 3: Coulston Labs
1	Pengantar Sistem Digital, Sinyal Diskrit, & Radiks	Bab 1 (Numeration) & Bab 2 (Binary Arithmetic)	Bab 1 (Intro to Digital Systems)	Lab 1 (Basic Logic Measurement)
2	Kode Digital (BCD, Gray, ASCII, Paritas)	Bab 3 (Binary Codes & Data Representation)	Bab 1 (Data Encodings)	Lab 2 (Code Converters)
3	Gerbang Logika Dasar & IC TTL 74xx	Bab 3 (Logic Gates) & Bab 4 (Switches)	Bab 2 (Gate-Level Logic)	Lab 3 (TTL IC Breadboard)
4	Aljabar Boolean & Bentuk Kanonis SOP/POS	Bab 7 (Boolean Algebra)	Bab 2 (Boolean Minimization)	Lab 4 (Combinational Logic)
5	Penyederhanaan K-Map 2-4 Variabel	Bab 8 (Karnaugh Mapping)	Bab 2 (K-Map Optimization)	Lab 5 (Minimization Labs)
6	K-Map 5-Variabel & Quine-McCluskey	Bab 8 (Advanced K-Map)	Bab 2 (Algorithmic Minimization)	Lab 5 (Don't Care Synthesis)
7	Aritmatika Kombinasional (Adder, Mux, Decoder)	Bab 9 (Combinational Logic Functions)	Bab 3 (Combinational Modules)	Lab 6 (Adders & Decoders)
8	EVALUASI TENGAH SEMESTER (UTS)			
9	Logika Sekensial, Latch, & Flip-Flop	Bab 10 (Multivibrators & Flip-Flops)	Bab 4 (Sequential Building Blocks)	Lab 7 (Latch & Flip-Flop IC)
10	Register Geser & Counter (Ripple vs Sync)	Bab 11 (Counters & Shift Registers)	Bab 4 (Registers & Counters)	Lab 8 (Synchronous Counters)
11	Finite State Machine (Mealy & Moore)	Bab 11 (Sequential State Control)	Bab 5 (Synchronous FSM Design)	Lab 9 (Sequence Detector FSM)
12	Memori Utama (SRAM/DRAM) & FPGA	Bab 12 (Memory Devices & PLD)	Bab 6 (Memory & Programmable Logic)	Lab 10 (FPGA Memory LUT)
13	CPU Datapath & ALU 8-Bit	Bab 13 (Digital Computer Elements)	Bab 7 (Datapath & Control Unit)	Lab 11 (8-Bit ALU Building)
14	Pemodelan HDL (VHDL & Verilog)	Bab 14 (Digital Simulation)	Bab 8 (HDL Synthesis & Modeling)	Lab 11 (HDL Hardware Synthesis)
15	Kapita Selekt RISC-V, SoC, & Demo Tubas	Bab 15 (Modern Systems)	Bab 9 (RISC-V Architecture Intro)	Capstone Project Presentation

Instruksi Evaluasi Tugas Membaca untuk Dosen & Asisten

- Kuis Awal Kelas (Pre-Test):** Setiap sesi kuliah diawali kuis 5 menit berbasis bacaan wajib di atas.
- Jurnal Bacaan Praktikum:** Mahasiswa wajib melampirkan ringkasan 1 halaman dari bab referensi Ref 3 pada Laporan Pendahuluan Praktikum.