

**CURRICULUME OF MECHANICAL ENGINEERING DEPARTMENT
 FAKULTY OF SCIENCE AND TECHNOLOGY
 UNIVERSITAS MUHAMMADIYAH KALIMANTAN TIMUR
 2022-2027**

YEAR	SEMESTER	TOTAL CREDITS	FOCUS
1	1-2	42	Basic and Characters
2	3-4	40	Basic Engineering
3	5-6	36	Mechanical Expertise
4	7-8	29	Integrated and Bachelor Thesis
TOTAL		147	

SEMESTER 1			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	UNI1101	Kemanusiaan dan Keimanan	2
2	UNI1104	Pancasila	2
3	UNI1106	Bahasa Inggris	2
4	UNI1107	Aplikasi Komputer	2
5	TME1011	Fisika I	3
6	TME1021	Matematika I	3
7	TME1031	Kimia	3
8	TME1041	Menggambar Teknik	2
9	TME1051	Statistika Struktur	2
Jumlah			21

SEMESTER 1			
No.	Course Code	Course	Credits
1	UNI1101	Humanity and Faith	2
2	UNI1104	Pancasila	2
3	UNI1106	English	2
4	UNI1107	Computer Applications	2
5	TME1011	Physics I	3
6	TME1021	Mathematics I	3
7	TME1031	Chemistry	3
8	TME1041	Engineering Drawing	2
9	TME1051	Structural Statics	2
Total			21

SEMESTER 2			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	UNI1101	Ibadah, Akhlak dan Muamalah	2
2	UNI1104	Bahasa Arab	2
3	UNI1106	Bahasa Indonesia	2
4	UNI1107	E-Bisnis	2
5	TME2011	Matematika II	3
6	TME2021	Fisika II	3
7	TME2031	Material Teknik I	2
8	TME2041	Menggambar Mesin	2
9	TME2051	Praktikum Fisika	1
10	TME2062	Matrik dan Vektor	2
Jumlah			21

SEMESTER 2			
No.	Course Code	Course	Credits
1	UNI1101	Worship, Ethics, and Islamic Transactions	2
2	UNI1104	Arabic Language	2
3	UNI1106	Indonesian Language	2
4	UNI1107	Digital Business	2
5	TME2011	Mathematics II	3
6	TME2021	Physics II	3
7	TME2031	Engineering Materials I	2
8	TME2041	Mechanical Engineering Drawing	2
9	TME2051	Physics Laboratory	1
10	TME2062	Matrices and Vectors	2
Total			21

SEMESTER 3			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	UNI2101	Islam dan IPTEKS	2
2	UNI2103	Kewarganegaraan	2
3	UNI2104	Pengantar Ilmu Lingkungan	2
4	UNI2105	Program Web Berbasis CMS	2
5	TME3011	Matematika III	3
6	TME3021	Material Teknik II	2
7	TME3031	Kinematika	2
8	TME3043	Mekanika dan Kekuatan Material	2
9	TME3051	Mekanika Fluida I	2
10	TME3061	Praktikum Material	1
Jumlah			20

SEMESTER 3			
No.	Course Code	Course	Credits
1	UNI2101	Islam and Science & Technology	2
2	UNI2103	Civics and Citizenship	2
3	UNI2104	Introduction to Environmental Science	2
4	UNI2105	CMS-Based Web Programming	2
5	TME3011	Mathematics III	3
6	TME3021	Engineering Materials II	2
7	TME3031	Kinematics	2
8	TME3043	Mechanics and Strength of Materials	2
9	TME3051	Fluid Mechanics I	2
10	TME3061	Materials Laboratory	1
Total			20

SEMESTER 4			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	UNI2102	Kemuhammadiyah	2
2	TME4013	Matematika IV	3
3	TME4023	Elemen Mesin I	2
4	TME4033	Perpindahan Kalor dan Massa	2
5	TME4041	Mekanika Fluida II	2
6	TME4053	Termodinamika I	2
7	TME4061	Statistika dan Probabilitas	3
8	TME4073	Metode Numerik	2
9	TME4083	Dinamika	2
Jumlah			20

SEMESTER 4			
No.	Course Code	Course	Credits
1	UNI2102	Muhammadiyah Studies	2
2	TME4013	Mathematics IV	3
3	TME4023	Machine Elements I	2
4	TME4033	Heat and Mass Transfer	2
5	TME4041	Fluid Mechanics II	2
6	TME4053	Thermodynamics I	2
7	TME4061	Statistics and Probability	3
8	TME4073	Numerical Methods	2
9	TME4083	Dynamics	2
Total			20

SEMESTER 5			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	TME5012	Teknik Tenaga Listrik	3
2	TME5023	Proses Manufaktur I	2
3	TME5031	Elemen Mesin II	2
4	TME5043	Sistem Kendali/Kontrol	2
5	TME5053	Termodinamika II	2
6	TME5061	Pengukuran Teknik / Metrologi	2
7	TME5071	Getaran Mekanik	2
8	TME5081	Praktikum Perpindahan Kalor dan Massa	1
9	TME5091	Praktikum Proses Manufaktur	1
10	TME5101	Praktikum Mekanika Fluida	1
Jumlah			18

SEMESTER 5			
No.	Course Code	Course	Credits
1	TME5012	Electrical Power Engineering	3
2	TME5023	Manufacturing Processes I	2
3	TME5031	Machine Elements II	2
4	TME5043	Control Systems	2
5	TME5053	Thermodynamics II	2
6	TME5061	Engineering Measurement and Metrology	2
7	TME5071	Mechanical Vibrations	2
8	TME5081	Heat and Mass Transfer Laboratory	1
9	TME5091	Manufacturing Processes Laboratory	1
10	TME5101	Fluid Mechanics Laboratory	1
Total			18

SEMESTER 6			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	UNI3140	Keterampilan Berkehidupan	2
2	TME6013	Design Project I	2
3	TME6021	Mekatronika	2
4	TME6031	Metode Penelitian	2
5	TME6041	Proses Manufaktur II	2
6	TME6053	Mesin Konversi Energi	3
7	TME6061	Teknik Perawatan	2
8	-	Pilihan Wajib I*	3
Jumlah			18

SEMESTER 6			
No.	Course Code	Course	Credits
1	UNI3140	Life Skills	2
2	TME6013	Design Project I	2
3	TME6021	Mechatronics	2
4	TME6031	Research Methodology	2
5	TME6041	Manufacturing Processes II	2
6	TME6053	Energy Conversion Machines	3
7	TME6061	Maintenance Engineering	2
8	-	Compulsory Elective I*	3
Total			18

SEMESTER 7			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	TME7013	Teknologi Mesin Pertambangan	2
2	TME7023	Praktik Kerja Nyata	2
3	TME7033	Manajemen Operasi	2
4	TME7043	Additive Manufacturing	2
5	TME7053	Design Project II	2
6	-	Pilihan Wajib II*	3
7	-	Pilihan Wajib Tambahan**	3
Jumlah			16

SEMESTER 7			
No.	Course Code	Course	Credits
1	TME7013	Mining Machinery Technology	2
2	TME7023	Industrial Internship	2
3	TME7033	Operations Management	2
4	TME7043	Additive Manufacturing	2
5	TME7053	Engineering Design Project II	2
6	-	Compulsory Elective II*	3
7	-	Additional Compulsory Elective**	3
Total			16

SEMESTER 8			
No.	Kode Mata Kuliah	Mata Kuliah	SKS
1	TME8011	Engineering Sustainability	2
2	TME8023	Technopreneurship	2
3	TME8031	Seminar Proposal Tugas Akhir	1
4	TME8041	Skripsi	5
5	-	Pilihan Wajib II*	3
Jumlah			13

SEMESTER 8			
No.	Course Code	Course	Credits
1	TME8011	Engineering Sustainability	2
2	TME8023	Technopreneurship	2
3	TME8031	Final Project Proposal Seminar	1
4	TME8041	Undergraduate Thesis	5
5	-	Compulsory Elective II*	3
Total			13

***Daftar Mata Kuliah Pilihan Wajib (*Compulsory Electives)**

***Compulsory Electives – Energy Conversion Concentration**

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits
1	TME6107.1	Aplikasi CFD	Computational Fluid Dynamics (CFD) Applications	3
2	TME7106.1	Teknologi Kendaraan Listrik dan Fuel Cell	Electric Vehicle and Fuel Cell Technology	3
3	TME8105.1	Sistem Pembangkit Daya	Power Generation Systems	3

***Compulsory Electives – Materials Engineering Concentration**

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits
1	TME6107.2	Pengujian dan Karakterisasi Material	Materials Testing and Characterization	3
2	TME7106.2	Rekayasa Material Unggul	Advanced Materials Engineering	3
3	TME8105.2	Material Komposit dan Polimer	Composite and Polymer Materials	3

***Compulsory Electives – Design and Manufacturing Technology Concentration**

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits
1	TME6107.3	Desain Produk Rekayasa	Engineering Product Design	3
2	TME7106.3	Pemesinan Non-Konvensional	Non-Conventional Machining Processes	3
3	TME8105.3	CAD-CAM-CNC	CAD/CAM/CNC Systems	3

***Compulsory Electives – Heavy Equipment Engineering Concentration**

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits
1	TME6107.4	Manajemen Perawatan Alat Berat	Heavy Equipment Maintenance Management	3
2	TME7106.4	Engineering Economy Alat Berat	Engineering Economy for Heavy Equipment	3
3	TME8105.4	Sistem Hidrolik Alat Berat	Heavy Equipment Hydraulic Systems	3

****Daftar Mata Kuliah Pilihan Tambahan (**Additional Elective Courses)****Expertise Group: Energy Conversion23**

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits	Expertise Group
1	TME7107.1	Mesin Pembakaran Dalam	Internal Combustion Engines	3	Energy Conversion
2	TME7107.2	Optimasi Sistem Energi	Energy Systems Optimization	3	Energy Conversion
3	TME7107.3	Audit Energi	Energy Audit	3	Energy Conversion

Expertise Group: Materials Engineering

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits	Expertise Group
1	TME7107.4	Perlakuan Panas	Heat Treatment of Materials	3	Materials Engineering
2	TME7107.5	Teknik Pengecoran	Casting Technology	3	Materials Engineering
3	TME7107.6	Metalurgi Serbuk	Powder Metallurgy	3	Materials Engineering
4	TME7107.7	Kelelahan dan Mekanika Perpatahan	Fatigue and Fracture Mechanics	3	Materials Engineering
5	TME7107.8	Korosi dan Pengendalian	Corrosion and Corrosion Control	3	Materials Engineering
6	TME7107.9	Smart Material	Smart Materials	3	Materials Engineering

Expertise Group: Design and Manufacturing Technology

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits	Expertise Group
1	TME7107.10	Sistem Otomasi Manufaktur	Manufacturing Automation Systems	3	Design & Manufacturing
2	TME7107.11	Proses Manufaktur Industri	Industrial Manufacturing Processes	3	Design & Manufacturing
3	TME7107.12	Estimasi Biaya Produk	Product Cost Estimation	3	Design & Manufacturing
4	TME7107.13	Quality Control	Quality Control and Assurance	3	Design & Manufacturing
5	TME7107.14	Desain Teknik Mesin	Mechanical Engineering Design	3	Design & Manufacturing
6	TME7107.15	Tooling System	Tooling Systems Design	3	Design & Manufacturing
7	TME7107.16	Biomechanics	Biomechanics	3	Design & Manufacturing
8	TME7107.17	Jig and Fixture	Jig and Fixture Design	3	Design & Manufacturing
9	TME7107.18	Peralatan Mesin dalam Proses Industri	Industrial Machinery and Equipment	3	Design & Manufacturing

Expertise Group: Heavy Equipment

No.	Course Code	Nama Mata Kuliah (Indonesia)	Course Title (English)	Credits	Expertise Group
1	TME7107.19	Sistem Power Train Alat Berat	Heavy Equipment Powertrain Systems	3	Heavy Equipment
2	TME7107.20	Sistem Vehicle Control and Electrical	Vehicle Control and Electrical Systems	3	Heavy Equipment
3	TME7107.21	Sistem Engine Alat Berat	Heavy Equipment Engine Systems	3	Heavy Equipment

**Head of Mechanical Engineering Department**

[Signature]
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