MODULE HAND BOOK

MECHANICAL ENGINEERING VOCATIONAL EDUCATION STUDY PROGRAM

FACULTY OF ENGINEERING – UNIVERSITAS NEGERI PADANG

COURSE NAME	CODE	Course classification	CU		Sem	Version
			Theory	Pract		
Vocational Pedagogy	MES1.61.5105	Compulsory Courses MEVE (educational aspect) core course	2	0	5	1
Responsible	Prf. Dr. Suparno, M. Pd, Prof. Prof. Dr. Nizwardi Jalinus, M.Ed, Prof. Dr. Ambiyar, M.Pd, Drs. Nelvi Erizon, M.Pd.		Signature _____			

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Program Learning Outcome	Program learning outcome of Mechanical engineering vocational education:
	1. Possess a good ability to apply the basic science (mathematics and natural sciences) and other disciplines in profesional jobs / projects (Knowledge-understanding) 1.1. possess a good understanding and can apply the basic concept of mathematics to solve various technical problems 1.2. possess a good understanding and can apply basic the concept of physic to solve various technical problems 1.3. possess a good understanding and can apply basic the concept of chemistry to solve various technical problems 2. Possess a critical and creative thingking in identifying, formulating, problem solving and evaluating various problems in mechanical engineering using the most appropriate and effective scientific method ***(Engineering analysis, investigations and assessment):*** 2.1. problem identification skills 2.2. problem analysis skills 2.3. problem evaluation skills

	3. Possess a good ability in designing, manufacturing and operating machines ***(Engineering design)*** 3.1. able to formulate ideas/concepts into a technical drawing, design and budget plans 3.2. able to operate various machines and other engineering equipment with the correct standard operating procedure 3.3. able to design a machine or machinery system based on a valid scientific theory 3.4. able to realize a concept/design into a prototype, manufacturing process and engineering system 4. Possess a good ability to design, organize and evaluate the education and learning process in *mechanical engineering vocational education.* ***(Education design)*** 4.1. able to design curriculum and learning process by considering various aspects 4.2. able to organize, control, evaluate and improve the quality of the learning process 4.3. able to develop an interesting, effective and efficient learning medias 5. Possess a good ability to adapt to development in science and technology and apply it into professional jobs by considering any non-technical aspects. ***(Engineering practice)*** 5.1. able to innovate and develop technology in the field of mechanical engineering by considering social, economic and environmental aspects 5.2. able to carry out the optimization process and increase the efficiency of machines or machining system. 5.3. able to improve the performance of machine/ machinery system by applying the information technology 6. Possess a good softskil and spirit of lifelong learning ***(Transferable skill / softskill)*** 6.1. possess a religious character 6.2. possess a spirit of nasionalisme, social sensitivity and environmental consevation orientation 6.3. possess the ability to communicate effectively and work together in teamwork 6.4. possess the ability to transfer science and technology to society to improve the quality of life 6.5. possess a good characters of entrepreneur

<table>
<tr><td>Course learning outcomes</td><td>Course learning outcomes
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<tr><th>CLO</th><th>PLO</th></tr>
<tr><td>1. College student Understand the concepts, goals and foundations of vocational pedagogy</td><td>4.1, 4.2, 4.3.</td></tr>
<tr><td>2. College student Understand various learning theories and learning models</td><td>4.1, 4.2, 4.3.</td></tr>
<tr><td>3. College student Understand the concept of preparation and development of learning tools</td><td>4.1, 4.2, 4.3</td></tr>
<tr><td>4. College student Understand the concept of generic skills in teaching and micro teaching / peer teaching</td><td>4.1, 4.2, 4.3</td></tr>
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<tr><td></td><td></td></tr>
<tr><td>Course descriptions</td><td>This course covers the theory and practice of vocational pedagogy, covers the concepts, foundations and goals of vocational pedagogy, develops learning tools (curriculum. Syllabus / GBPP, teaching materials, media, learning methods and evaluation) utilizing various media to improve the learning process vocational education. Basic teaching skills and teaching skills with various methods are complementary to training prospective teachers to be able to teach in classrooms, workshops and in laboratories.</td></tr>
<tr><td>References</td><td>Main Reference (RU):

Ansari, ES (1983). Philosophy, Science and Religion. Surabaya: Science Development.
Henderson, SVP (1959). Introduction to Philosophy of Education. Chicago: The University of Chicago Press
Langeveld, MJ (1980). Beknopte Theoritische Paedagogiek. (Translated: Simanjuntak). Bandung: Jemmars.
Mudyahardjo, R. (1996). Philosophy, Education (An Academic Study). Bandung: Department of FSP, FIP IKIP Bandung.
Noor, M., (Ed.). (1987). Educational Philosophy and Theory: Volume I Philosophy of Education. Sub-Coordinator for Educational Theory and Philosophy Subjects. Bandung: Faculty of Education, IKIP Bandung

Additional Reference (RP)

Soelaeman, MI (1988). A Study of Human-Religious Education. Ministry of Education and Culture
</td></tr>
<tr><td>Learning Media</td><td>Software:</td><td>Hardware:</td></tr>
<tr><td></td><td></td><td>Computer, LCD Projector and Whiteboard and peripherals</td></tr>
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Team Teaching	
Assessment	Mid-Test Exam, Final Exam, Independent & group assignments, Group presentations
Requirements Subject	No

Course Objects

Week	Expected competencies	Topics	Method and strategy for leraning	Assignment	Criterion / Assessment indicattor	References
(1)	**CLO-1.1: [PLO-**4.1, 4.2, 4.3] Students are able to master the concepts and goals of vocational pedagogy.	Concepts, goals of vocational pedagogy and principles of vocational education	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5, and RP-1
(2)	**CLO-1.2: [PLO-**4.1, 4.2, 4.3] Students are able to master the concept of vocational education curriculum.	Curriculum concept, learning approach, skill spectrum and vocational curriculum structure	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(3)	**CLO-1.3: [PLO-**4.1, 4.2, 4.3] Students are able to develop and compile a SMK / GBPP syllabus.	Concepts and techniques for preparing the syllabus / GBPP	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book preparation of the syllabus / GBPP	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(4)	**CLO-1.4: [PLO-**4.1, 4.2, 4.3] Students are able to develop and compile a SMK learning implementation plan (RPP).	The concept and technique of preparing the SMK learning implementation plan (RPP)	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book preparation of SMK learning implementation plans (RPP)	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(5)	**CLO-2.1: [CP-**4.1, 4.2, 4.3] Students are able to master the concepts and	Students are able to conceptualize and effectiveness of learning	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 ']	Make a summary and description of the material presented in	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5

Week	Expected competencies	Topics	Method and strategy for leraning	Assignment	Criterion / Assessment indicattor	References
	effectiveness of learning media.	media	Assignment [1x10 ']	the resume book Making learning media		
(6)	**CLO-3.1: [CP-**4.1, 4.2, 4.3] Students are able to master the concepts, principles, steps in the preparation of teaching materials.	Concepts, principles, steps in the preparation of teaching materials	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(7)	**CLO-3.2: [CP** 4.1, 4.2, 4.3] Students are able to master the concepts, roles and steps of preparing teaching materials.	concepts, roles and steps for the preparation of teaching materials.	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(8)	**Mid Smester Exam**					
(9)	**CLO-4.1: [CP** 4.1, 4.2, 4.3] Students are able to master the concepts and applications of teaching methods.	Concept, steps and application of teaching methods in microteaching.	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book Application of teaching methods in microteaching	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(10)	**CLO-4,2: [CP** 4.1, 4.2, 4.3] Students are able to master the concepts and principles of micro teaching.	Concept, and application of the principles of teaching microteaching	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(11)	**CLO-4.3: [CP** 4.1, 4.2, 4.3, 6.3] Students are able to master the techniques of opening and closing learning.	The technique of opening and closing learning.	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book Practicum The technique of opening and closing learning	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(12)	**CLO-4.4: [CP** 4.1, 4.2, 4.3, 6.3] Students are able to master the principles of providing	Engineering principles provide reinforcement.	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5

Week	Expected competencies	Topics	Method and strategy for leraning	Assignment	Criterion / Assessment indicattor	References
	reinforcement.			Practicum Engineering principles provide reinforcement.		
(13)	**CLO-4.5: [CP** 4.1, 4.2, 4.3, 6.3] Students are able to master the principles of questioning techniques in learning.	Planning and implementing the principles of questioning techniques in learning	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book Practicum questioning techniques in learning	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(14)	**CLO-4.6: [CP** 4.1, 4.2, 4.3, 6.3] Students are able to plan and implement the principles and concepts of classroom management in learning.	Students are able to plan and implement the principles and concepts of classroom management in learning	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(15)	**CLO-4.7: [CP** 4.1, 4.2, 4.3, 6.3] Students are able to plan and implement skills to explain and make variations in learning	Planning and implementing improved skills in explaining and making variations in learning.	Lecture [1x200 '] Question and answer [1x20 '] Discussion [1x70 '] Assignment [1x10 ']	Make a summary and description of the material presented in the resume book Practicum explaining skills	Written Tests, Assignments and Performance Tests	RU-1, RU-2, RU-3, RU-4, RU-5
(16)	**Semester Examination (US)**					
	Final Exam					

Note : 1 credit = (50 'TM + 60' BT + 60 'BM) / Week
TM = Face to Face (Lecture)
BT = Structured Learning.
BM = Independent Study
PS = Simulation Practicum (160 minutes / week)
PL = Laboratory Practicum (160 minutes / week)
T = Theory (aspects of science)
P = Practice (aspects of work skills)

The linkage between CLO and PLO and assessment methods

MSN1.62.4007	Assessment	Point (%)	PLO-1			PLO-2			PLO-3				PLO-4			PLO-5			PLO-6				
			1	2	3	1	2	3	1	2	3	4	1	2	3	1	2	3	1	2	3	4	5
CLO-1.3	UTS. 4.1, 4.2, 4.3	7											V	V	V								
CLO-1.4	UTS. 4.1, 4.2, 4.3	7											V	V	V								
CLO-2.2	UTS. 4.1, 4.2, 4.3	7											V	V	V								
CLO-2.3	UTS. 4.1, 4.2, 4.3	7											V	V	V								
CLO-3.3	UTS. 4.1, 4.2, 4.3	7											V	V	V								
CLO-3.1	UAS. 6.1, 6.2, 6.3, 6.4	7											V	V	V								
CLO-3.2	UAS. 6.1, 6.2, 6.3, 6.4	7											V	V	V								
CLO-3.3	UAS. 6.1, 6.2, 6.3, 6.4	7											V	V	V								
CLO-4.1	UAS. 6.1, 6.2, 6.3, 6.4	7											V	V	V								
CLO-4.2	UAS. 6.1, 6.2, 6.3, 6.4	7											V	V	V								
CLO-3	Practicum	20									V												
CLO-4	Practicum										V												
Presence		10																					
TOTAL		100																					

Assessment Component

Midterm exam (UTS) : 35%

Final exams (UAS) : 35%

Assignment/Practicum : 20%

Presence : 10%

Total : 100%

Scoring/Grading level description

	Excellent	**Good**	**Satisfy**	**Fail**
ability to describe	Able to describe correctly and completely	Able to describe correctly but not complete	Able to describe but less clear and incomplete	Unable to describe
ability to formulate	Able to formulate correctly and completely	Able to formulate correctly but not complete	Able to formulate but less clear and incomplete	Unable to formulate
ability to calculate	Able to calculate correctly and completely	Able to calculate correctly but not complete	Able to calculate but less clear and incomplete	Unable to calculate
ability to analyze	Able to analysize correctly and completely	Able to analyze correctly but not complete	Able to analyze but less clear and incomplete	Unable to analyze

Scoring and grading system

Score	**Quality**	**Quality score**	**Designation**	**Score**	**Quality**	**Quality score**	**Designation**
85 – 100	A	4.0	Outstanding	55 – 59	C	2.0	Acceptable
80 – 84	A-	3.6	Excellent	50 – 54	C-	1.6	Poor
75 – 79	B+	3.3	Very good	40 – 49	D	1.0	Poor
70 – 74	B	3.0	Good	≤ 39	E	0.0	Fail
65 – 69	B-	2.6	Good	-	T	-	Postpone
60 – 64	C+	2.3	Acceptable				