



# 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		
Educational psychology	UNP1.61.2101	UNP Compulsory Courses/ MEVE (educationl aspect) core course	2	0	4	
Responsible	Drs. Yusri M.Pd.Kons, Dr. Yenikarneli, M.Pd.Kons, Mursyd Ridha, S.Ag, M.Pd., Dr. Netrawati, M.Pd.Kons		Signature			
<u>INFORMATION</u>	<u>Dean of Faculty of Engineering</u>		<u>Department head</u>		<u>Responsible of study program</u>	
	<u>Dr. Fahmi Rizal, M.Pd., MT</u> NIP. 195912041985031004		<u>Drs. Purwantono, M.Pd</u> NIP. 196308041986031002		<u>Drs. Purwantono, M.Pd</u> NIP. 196308041986031002	
Program Learning Outcome	<b>Program learning outcome of Mechanical engineering vocational education:</b> <ol style="list-style-type: none"> <li>1. Possess a good ability to apply the basic science (mathematics and natural sciences) and other disciplines in profesional jobs / projects (Knowledge-understanding)               <ol style="list-style-type: none"> <li>1.1. possess a good understanding and can apply the basic concept of mathematics to solve various technical problems</li> <li>1.2. possess a good understanding and can apply basic the concept of physic to solve various technical problems</li> <li>1.3. possess a good understanding and can apply basic the concept of chemistry to solve various technical problems</li> </ol> </li> <li>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 (<b><i>Engineering analysis, investigations and assessment</i></b>):               <ol style="list-style-type: none"> <li>2.1. problem identification skills</li> <li>2.2. problem analysis skills</li> </ol> </li> </ol>					

	<ul style="list-style-type: none"> <li>2.3. problem evaluation skills</li> <li>3. Possess a good ability in designing, manufacturing and operating machines (<b>Engineering design</b>) <ul style="list-style-type: none"> <li>3.1. able to formulate ideas/concepts into a technical drawing, design and budget plans</li> <li>3.2. able to operate various machines and other engineering equipment with the correct standard operating procedure</li> <li>3.3. able to design a machine or machinery system based on a valid scientific theory</li> <li>3.4. able to realize a concept/design into a prototype, manufacturing process and engineering system</li> </ul> </li> <li>4. Possess a good ability to design, organize and evaluate the education and learning process in <i>mechanical engineering vocational education</i>. (<b>Education design</b>) <ul style="list-style-type: none"> <li>4.1. able to design curriculum and learning process by considering various aspects</li> <li>4.2. able to organize, control, evaluate and improve the quality of the learning process</li> <li>4.3. able to develop an interesting, effective and efficient learning medias</li> </ul> </li> <li>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. (<b>Engineering practice</b>) <ul style="list-style-type: none"> <li>5.1. able to innovate and develop technology in the field of mechanical engineering by considering social, economic and environmental aspects</li> <li>5.2. able to carry out the optimization process and increase the efficiency of machines or machining system.</li> <li>5.3. able to improve the performance of machine/ machinery system by applying the information technology</li> </ul> </li> <li>6. Possess a good softskil and spirit of lifelong learning (<b>Transferable skill / softskill</b>) <ul style="list-style-type: none"> <li>6.1. possess a religious character</li> <li>6.2. possess a spirit of nasionalisme, social sensitivity and environmental consevation orientation</li> <li>6.3. possess the ability to communicate effectively and work together in teamwork</li> <li>6.4. possess the ability to transfer science and technology to society to improve the quality of life</li> <li>6.5. possess a good characters of entrepreneur</li> </ul> </li> </ul>
Course learning	Course learning outcomes

<b>outcomes</b>	<b>CLO</b>	<b>PLO</b>
	1. Students are devoted to God Almighty and able to show religious attitudes	4.1, 4.2, 4.3
	2. Students have insight and understanding of the psychological aspects of students, their relationships and their application in the learning process.	4.1, 4.2, 4.3
	3. Students recognize and identify several psychological potentials that can affect the learning process and outcomes.	4.1, 4.2, 4.3
	4. Students have insight into several learning theories and can use them in the learning process	4.1, 4.2, 4.3
	5. Students are able to conduct psychological studies of the learning process in terms of various aspects that allow the learning process to take place effectively.	4.1, 4.2, 4.3
	6. Able to apply logical, critical, systematic, and innovative skills in the context of developing or implementing science and technology that pays attention to and applies humanities values according to their fields of expertise.	4.1, 4.2, 4.3
	7. Able to maintain and develop networks with colleagues, peers both inside and outside the institution	4.1, 4.2, 4.3
<b>Course descriptions</b>	The Educational Psychology course must be studied by all prospective educator students and prospective educational staff. This course equips students with the ability to conduct psychological studies on various components of education in general and components of learning in particular. In detail, the material to be discussed in this course includes: basic concepts of educational psychology, concepts of growth and development, developmental taCU, student characteristics for each developmental peroidesasi, intelligence, creative talents, interest and motivation, saturation and transfer in learning and the relationship of all these aspects with the learning process. In smaping, it also discusses individual differences and their deep diversity learning.	
<b>References</b>	<b>Main Refernce (RU):</b>	
	<ol style="list-style-type: none"> <li>1. DePorter &amp; Mike Hernacki. 2004. Quantum Learning. Bandung: Mizan Pustaka</li> <li>2. DePorter, Mark reardom, Sarah Singer-Nourie. 2005. Quantum Teaching. Bandung: Mizan Pustaka</li> <li>3. Hurlock, B. Elizabeth. 1993. Developmental Psychology, Interpretation of Istiwidayanti and Soedjarwo, Jakarta: Erlangga</li> <li>4. Goleman, Daniel. 1995. Emotional Intelligence. Translation T. Hermaya. Jakarta: Gramedia Pustaka Utama</li> <li>5. Mudjiran, et al. 2007. Development of Textbook Students. Padang: FIP UNP .....</li> <li>6. Santrok, John. W., 2008. Educational Psychology. Tri Wibowo Language Transfer. Jakarta: Kencana Prenanda Media Group .....</li> </ol>	

	<p>7. Santrok, John. W., 2007. Adolescents, Benecdita Widyasinta Language Interpreter. Jakarta: Erlangga</p> <p>8. Santrok, John. W., 1995. Life-Span Life Span Development. Transfer of Languages Achmad Chusairi and Juda Damanik. Jakarta Erlangga.</p>	
	<b>Additional Reference (RP)</b>	
	<p>1. Asri Budiningsih. 2005. Learning and Learning. Jakarta: Rineka Cipta .....</p> <p>2. Makmum Muyabidh. 2006. Children's Emotional Intelligence &amp; Health. Jakarta: Pustaka Al-Kautsar.</p> <p>3. Muhibbin Shah. 2000. Educational Psychology. Bandung: Youth RsdA Karya.</p> <p>4. Omrod, J. Ellis. 2008. Educational Psychology Helps Students Grow and Develop. Interpretation of Amitya Kumara. Jakarta: Erlangga.</p> <p>5. Ratna Wilis Dahar. 1988. Learning Theories. Jakarta: Erlangga.</p> <p>6. Sardiman. 1986. Teaching-Learning Interaction and Motivation. Jakarta: Raja Grafindo Persada.</p> <p>7. Semiawan, Cony. 1984. Nurturing Talent and Creativity of Middle School Students. Jakarta: Gramedia.</p> <p>8. Solso L. Robert. Maclin H. Otto; Maclin M, Kimberly. 2005. Cognitive Psychology. Translation of Mikael Rahardanto and Kristianto Batuadji. Eighth Edition. Jakarta: Erlangga.</p> <p>9. Sri Esti Wuryani Djiwandono. 2002. Educational Psychology. Jakarta: Gramedia Widiasarana Indonesia.</p> <p>10. Sumadi Suryabrata. 2001. Educational Psychology. Jakarta: king of Grafindo Persada</p>	
<b>Learning Media</b>	<b>Software:</b>	<b>Hardware:</b>
		Computer, LCD Projector and Whiteboard and peripherals
<b>Team Teaching</b>		
<b>Assessment</b>	Mid-Test Exam, Final Exam, Independent & group assignments, Group presentations	
<b>Requirements Subject</b>	No	

## Course Objects

Week	Expected competencies	Topics	Method and strategy for learning	Assignment	Criterion / Assessment indicator	References
1	2	3	4	5	6	7
1	1. Mastering the background of the importance of this course for an educator 2. Understand the demands that must be done by students regarding course objectives. 3. Mastering the concept of educational psychology and the role of educators	Observing lecturer information regarding the provisions of this course through the syllabus	1. Lecture Orientation 2. Administration College student 3. RPS discussion, including: Subject objectives and course positions as university general courses	Delivery of information, questions and answers, discussions and assignments		
2	Have an understanding of the concepts of growth and development and their relationship with the learning process	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	GROWTH AND DEVELOPMENT AND THE RELATIONSHIP WITH THE LEARNING PROCESS 1. Definition of growth and development 2. Factors affecting development 3. Principles / laws of development	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17

3	Have an understanding of the stages and taCU of development and implementation in the learning process	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	<p>DEVELOPMENT STAGES AND TACU</p> <ol style="list-style-type: none"> <li>1. The stage of development of the human task</li> <li>2. Child / child development taCU</li> <li>3. Developmental taCU for adolescence</li> <li>4. Adult developmental taCU</li> <li>5. The task of development and implementation in learning</li> </ol>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
4	Have an understanding of intelligence and its role in learning	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	<p>UNDERSTANDING INTELEGNITY IN LEARNING</p> <ol style="list-style-type: none"> <li>1. The concept of intelligence / intelligence</li> <li>2. IQ classification</li> <li>3. Multiple Intelligence Concept of multiple intelligences)</li> <li>4. The teacher's effort helps students in learning accordingly potential</li> </ol>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17

5	Have an understanding of talents and their role in learning	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	<p>THE ROLE OF TALENTS IN THE LEARNING PROCESS</p> <ol style="list-style-type: none"> <li>1. Definition of talent</li> <li>2. Types of talent</li> <li>3. Factors affecting talent</li> </ol> <p>Teachers' efforts to recognize and develop talents</p>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
6	Have an understanding of talents and their role in learning.	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	<p>THE ROLE OF CREATIVITY IN LEARNING</p> <ol style="list-style-type: none"> <li>1. Understanding creativity</li> <li>2. Creative individual or characteristics of creative learners</li> <li>3. The stages of developing creativity</li> <li>4. Which factor affect its development</li> </ol>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17

7	Have an understanding of information processing concepts in learning	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	<p>PROCESSING OF INFORMATION IN LEARNING</p> <ol style="list-style-type: none"> <li>1. Concept, sensation, attention, perception and memory</li> <li>2. Factors affecting information processing</li> <li>3. Use of information processing in learning</li> <li>4. Forget in studying <ol style="list-style-type: none"> <li>a. The process of forgetting in learning</li> <li>b. Factors that cause forgetting</li> </ol> </li> </ol> <p>Tips to reduce forgetting in studying</p>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
8	MID TERM TEST					
9	Have an understanding of Behavioristic learning theory and its application in learning	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	<p>THEORY OF LEARNING AND ITS APPLICATION IN LEARNING</p> <ol style="list-style-type: none"> <li>1. Understanding of learning according to Behavioristic theory</li> <li>2. Learning principles according to behavioristic learning theory</li> <li>3. Application of learning theory Behavioristic in learning</li> </ol>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
	Have an understanding of Cognitive learning theory and its application in	Observe information about the material, participate in	THEORY OF LEARNING AND ITS APPLICATION IN LEARNING (CONTINUED)	Delivery of information, questions and	The accuracy of the concept, the accuracy of the	1-17



10	learning	discussion activities, provide questions, ask, take notes and conclude	<ol style="list-style-type: none"> <li>1. Understanding learning according to cognitive learning theory</li> <li>2. Learning principles according to cognitive learning theory</li> </ol> Application of cognitive learning and learning theory	answers, discussions and assignments	explanation, the accuracy of the effectiveness of communication, cooperation and participation	
11	Have an understanding of social learning theory and Humanistic learning theory and its application in learning	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	THEORY OF LEARNING AND ITS APPLICATION IN LEARNING (CONTINUED) <ol style="list-style-type: none"> <li>1. Understanding learning according to social and humanistic learning theory</li> <li>2. Learning principles according to social and humanistic learning theory</li> <li>3. Application of learning theory</li> </ol> Cognitive and Humanistic in learning	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
12	Have an understanding of motivation in learning	Observe information about the material, participate in discussion activities, provide questions, ask questions, take notes and conclude-right	MOTIVATION IN LEARNING <ol style="list-style-type: none"> <li>1. Definition of motivation</li> <li>2. Motivational function</li> <li>3. Motivation theories</li> </ol> The teacher's efforts to increase student motivation	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
	Have an understanding of burnout and transfer in learning	Observe information about the material, participate in	Saturation, AND TRANSFER IN LEARNING <ol style="list-style-type: none"> <li>1. Saturation in learning</li> </ol>	Delivery of information, questions and	The accuracy of the concept, the accuracy of the	1-17

13		discussion activities, provide questions, ask, take notes and conclude	<ul style="list-style-type: none"> <li>a. Understanding boredom in learning</li> <li>b. Factors that cause and how to overcome burnout in learning</li> </ul> 2. Transfer in learning <ul style="list-style-type: none"> <li>a. Transfer understanding in studying Transfer modes in study</li> </ul>	answers, discussions and assignments	explanation, the accuracy of the effectiveness of communication, cooperation and participation	
14	Have an understanding of individual differences in learning	Observe information about the material, participate in discussion activities, provide question,	INDIVIDUAL DIFFERENCES IN LEARNING <ul style="list-style-type: none"> <li>1. Learning style</li> <li>2. Personality and temperament</li> <li>3. Socio-economic and cultural</li> <li>4. Approach learning accordingly</li> </ul>	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	1-17
15	Have an understanding of individual differences in learning	Observe information about the material, participate in discussion activities, provide questions, ask, take notes and conclude	INDIVIDUAL DIFFERENCE IN LEARNING (continued) <ul style="list-style-type: none"> <li>1. Students at Risk</li> <li>2. Students with special needs.</li> </ul> The learning approach is in accordance with the diversity of students	Delivery of information, questions and answers, discussions and assignments	The accuracy of the concept, the accuracy of the explanation, the accuracy of the effectiveness of communication, cooperation and participation	8-17
16	Final Test					

**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**

Week	MES1.61.3102	Assessment	Quality (%)	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	
1	CLO-1	UTS.1	5											V	V	V									
2	CLO-1	UTS.2	5											V	V	V									
3	CLO-2	UTS.3	5											V	V	V									
4	CLO-2	UTS.4	5											V	V	V									
5	CLO-3	UTS 5	5											V	V	V									
6	CLO-3	UTS 6	5											V	V	V									
7	CLO-4	UTS 7	5											V	V	V									
9	CLO-4	UAS 1	7											V	V	V									
10	CLO-5	UAS 2	7											V	V	V									
11	CLO-5	UAS 3	7											V	V	V									
12	CLO-6	UAS 4	7											V	V	V									
13	CLO-6	UAS 5	7											V	V	V									
14	CLO-7	Presentation	10											V	V	V									
15	CLO-6,7	Presentation	10											V	V	V									
16	CLO-5,6,7	Assignment	15											V	V	V									
	TOTAL		100																						

**Assessment Component**

Midtest exam : 35%  
 Final exams : 35%

Duty	: 20%
Presence	: 10%
Total	: 100%

### Scoring/Grading level description

	Excellent	Good	Satisfy	Fail
ability to describe	Able to describe <b>correctly</b> and <b>completely</b>	Able to describe <b>correctly</b> but <b>not complete</b>	Able to describe but <b>less clear</b> and <b>incomplete</b>	<b>Unable</b> to describe
ability to formulate	Able to formulate <b>correctly</b> and <b>completely</b>	Able to formulate <b>correctly</b> but <b>not complete</b>	Able to formulate but <b>less clear</b> and <b>incomplete</b>	<b>Unable</b> to formulate
ability to calculate	Able to calculate <b>correctly</b> and <b>completely</b>	Able to calculate <b>correctly</b> but <b>not complete</b>	Able to calculate but <b>less clear</b> and <b>incomplete</b>	<b>Unable</b> to calculate
ability to analyze	Able to analyze <b>correctly</b> and <b>completely</b>	Able to analyze <b>correctly</b> but <b>not complete</b>	Able to analyze but <b>less clear</b> and <b>incomplete</b>	<b>Unable</b> 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				

