



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/01
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV, Time: 100 minutes
5. Basic competence : Students know and can operate some mathematics software, include their features.
6. Indicator :
 - Student knows some mathematics software, i.e. MATLAB, Maple and Mathematica
 - Student can use the softwares and operate them well
 - Student understands the features of the softwares
7. Essential Concepts : Introducing some mathematics softwares
8. Learning Activity : 1

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer explains the objective of the course and motivates students related to topic	5'	Explanation and Discussion	Computer, LCD	A:1	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Lecturer explains the introduction of MATLAB, maple and Mathematica • Lecturer demonstrates the usage of MATLAB, maple and Mathematica • Students do the same thing in their computer and discuss in a group • Lecturer facilitates the students to get further information about some features in the software. 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others
Closure	<ul style="list-style-type: none"> • Student and lecturer concludes todays topic • Lecturer gives assignment 	10'				
Follow up	Students are asked to go to http://www.mathworks.com and open the DEMO and	5'				

	HELP in MATLAB to study further about the features					
--	--	--	--	--	--	--

Learning Activity : 2 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic Lecturer delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	Students practice and doing exercises to solve some problem using the software	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer describes the introduction of the next material Students are supposed to read the next material in handout and explore the Internet.	5'	Explanation			

9. Assessment

Quiz:

- What is the difference of variable in MATLAB, Maple and Mathematica?
- Use the arithmetic operator in MATLAB, Maple and Mathematica to operate some numbers.

Assignment:

Find the command to create a matrix in MATLAB, Maple and Mathematica in the Internet. Write your result in MS Word and submit your paper.

10. Reference

Compulsory:

- Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

- Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.
- <http://www.matworks.com/access/helpdesk/help/>
- <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/02
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV, Time: 100 minutes
5. Basic competence : Students can use MATLAB to solve some problems in matrices, its operation and manipulation
6. Indicator :
Student can determine : Definition of Matrix in MATLAB, Size of a matrix, Transpose of a matrix, Special Matrices, The Identity Matrix, Diagonal Matrix, Building Matrix, Extracting Bits of Matrix, Dot product of matrices, Matrix-vector products, Matrix-Matrix Products, Sparse Matrix, Inverse of Matrix, Determinant, The sum Function for matrix, maximum and minimum for matrix, and find a value in matrix.
7. Essential Concepts : Computer application for manipulating matrix using MATLAB
8. Learning Activity : 3

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer explains the objective of the course and motivates students related to topic	5'	Explanation and Discussion	Computer, LCD	A:11	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students trying the commands of matrices, operate and manipulate matrices by following the instruction in handout using computer • Lecturer guides students to get the main meaning of the matrices commands, make some notes in handout and conclusions • Lecturer facilitate students to get more information about the material 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others
Closure	Students are asked to expose their conclusion	10'				
Follow up	Students are asked to collect some problems in	5'				

	matrices from journal, articles, Internet					
--	---	--	--	--	--	--

Learning Activity : 4 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic Lecturers delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	Students practice and doing exercises to solve some matrices problem using MATLAB	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next material in handout and open HELP in MATLAB about the material	5'	Explanation			

9. Assessment

Quiz:

$$i) \text{ Given } A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \\ 1 & 1 \end{bmatrix} \quad B = \begin{bmatrix} 4 & -1 \\ 0 & 2 \end{bmatrix} \quad C = \begin{bmatrix} 1 & 4 & 2 \\ 3 & 1 & 5 \end{bmatrix} \quad D = \begin{bmatrix} 1 & 5 & 2 \\ -1 & 0 & 1 \\ 3 & 2 & 4 \end{bmatrix} \quad E = \begin{bmatrix} 6 & 1 & 3 \\ -1 & 1 & 2 \\ 4 & 1 & 3 \end{bmatrix}$$

Determine the element of	variable	Determine the element of	variable
1. the 2th row and 3th column of C*(D*E)	CDE23	6. first column of B*A	BA1
2. first row of A*B	AB1	7. the 2 nd and 3 rd column of D	D23
3. the 2nd column of A*B	AB2	8. the 1-2 row and 1-2 column of E	E12
4. the 3rd row of A*A	AA3	9. the 2-3 row of D	D2
5. the 3rd row of A*B	AB3	10. the 1-2 row of E	E1

ii). Using the special matrices command, i.e. **magic**, **zeros**, **ones**, **eye**, **pascal**, generates the new matrices below.

$$\begin{array}{lll}
 1. \begin{pmatrix} 16 & 2 & 3 & 13 & 1 \\ 5 & 11 & 10 & 8 & 1 \\ 9 & 7 & 6 & 12 & 1 \\ 4 & 14 & 15 & 1 & 1 \\ 0 & 0 & 0 & 0 & 100 \end{pmatrix} & 2. \begin{pmatrix} 1 & 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 & 1 \\ 0 & 0 & 1 & 1 & 1 \\ 1 & 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 \end{pmatrix} & 3. \begin{pmatrix} 1 & 0 \\ 0 & 1 \\ 1 & 0 \\ 0 & 1 \end{pmatrix} \\
 4. \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} & 5. \begin{pmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 1 & 3 & 6 \end{pmatrix} & 6. \begin{pmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 1 & 3 & 6 \\ 1 & 1 & 1 \end{pmatrix} & 7. \begin{pmatrix} 0 & 1 & 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 1 & 2 & 3 \\ 0 & 1 & 0 & 1 & 3 & 6 \\ 0 & 0 & 1 & 1 & 1 & 1 \end{pmatrix}
 \end{array}$$

10. Reference

Compulsory:

E. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

F. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

G. <http://www.matworks.com/access/helpdesk/help/>

H. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/03
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students can operate elementary mathematics built-in function, relation operators and logical variables in MATLAB
6. Indicator :
Student can operate numbers and format command in Matlab, trigonometric functions in Matlab, exponential functions in Matlab, Complex functions in Matlab, Rounding and Remainder functions in Matlab, Discrete Math functions in Matlab, logical variables and relational operators.
7. Essential Concepts : Computer application in basic mathematics function using MATLAB
8. Learning Activity : 5

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer explains the objective of the course and motivates students related to topic	5'	Explanation and Discussion	Computer, LCD	A:23	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students try the command to use some built-in function in elementary mathematics, logical variables and relation operators by following the instruction in handout using computer • Lecturer guides students to get the main meaning of the command, make some notes in handout and conclusions • Lecturer facilitate students to get more information about the material 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others
Closure	Lecturer invites students to share their conclusion	10'				

Follow up	Students are asked to collect some problems that use the mathematics functions from journal, articles, and Internet	5'				
-----------	---	----	--	--	--	--

Learning Activity : 6 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic Lecturer delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	Students practice and do exercises to solve some of using the built-in function in MATLAB	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next material in handout and open HELP in MATLAB about the material	5'	Explanation			

9. Assessment

Quiz:

A. Makes a random matrix R 4 x 4

Do the following operations to R:

- | | | |
|-------------------------|--------------------------|--------------------------|
| a. <code>abs(R)</code> | c. <code>fix(R)</code> | e. <code>round(R)</code> |
| b. <code>ceil(R)</code> | d. <code>floor(R)</code> | f. <code>sign(R)</code> |

Describe the differences of *ceil*, *fix*, *floor* dan *round*.

B. Find the lcm and gcd of

- | | |
|---|--|
| a. 78 and 87 | c. 12,56, and 68 |
| b. <code>magic(4)</code> and <code>pascal(4)</code> | d. <code>x=[2 8 10]</code> and <code>y=[3 9 15]</code> |

C. Gives the example of the usage of:

- | | | |
|------------------------|---------------------------|-----------------------|
| a. <code>rem</code> | d. <code>factorial</code> | g. <code>log2</code> |
| b. <code>mod</code> | e. <code>factor</code> | h. <code>log10</code> |
| c. <code>primes</code> | f. <code>log</code> | i. <code>pow2</code> |

D. Makes A, a 2 x 5 matrix which the elements are:

First row : start from -2 to 2, the number of element is 5

The 2nd row: start from 5 to -3, and the difference between the element is 2

- a. Determine the element of A that is greater than 0
- b. Explain the command: i) any(A) ii) all(A) iii) xor(A(1,:), A(2,:))
- c. Determine command to find the element of A that is equal to -1 or 1. Save the answer as B.
- d. Explain the command:
i) $A=A+(A== -1) *pi$ ii) $A=A - (A== 1) *pi$ iii) $A(B) = 100$

10. Reference

Compulsory:

- I. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

- J. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.
- K. <http://www.matworks.com/access/helpdesk/help/>
- L. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/04
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students can solve problem of systems of linear equation using MATLAB
6. Indicator :
 - Student can explain the category of systems of linear equation
 - Student can solve the problem of systems of linear equation
7. Essential Concepts : Computer application for solving systems of linear equations using MATLAB
8. Learning Activity : 7

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Some students are asked to share their idea about the next topic (in last meeting they have asked to read the material) 	5'	Explanation and Discussion	Computer, LCD	A:34	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students are invited to give active participation in the discussion to find some problems in systems of linear equation • Lecturer helps students to get the right concepts of the topic • In pair, students discuss to solve their own problem • Students share their result to others in front of class, and others give their comments • Lecturer guides students to get the main meaning 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	of the command, make some notes in handout and conclusions					
	<ul style="list-style-type: none"> Lecturer facilitate students to get more information about the material 					
Closure	Student and lecturer conclude the discussion of the topic	10'				
Follow up	Students are asked to collect some problems of systems of linear equations from journal, articles, and Internet	5'				

Learning Activity : 8 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic Lecturer delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> Students practice and doing exercises to solve some problem of systems of linear equation Students share their results on finding some problem of systems of linear equation 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment Appreciative of works and achievements of others
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			
Follow up	Lecturer gives introduction of the next material Students are asked to read the next material in handout and open HELP in MATLAB about the material	5'	Explanation			

9. Assessment

Quiz:

- Solve the systems of linear equation below:

$$\begin{aligned} 1. \quad & 3x_1 - x_2 + 2x_3 = 10 \\ & 3x_2 - x_3 = 15 \\ & 2x_1 + x_2 - 2x_3 = 0 \end{aligned}$$

$$\begin{aligned} 3. \quad & -2x_1 + x_2 + 5x_3 = 1 \\ & 3x_2 - x_3 = 4 \\ & 8x_1 + 2x_2 = 5 \end{aligned}$$

$$\begin{aligned} 2. \quad & -1x + 7y + 5z = 12 \\ & 6x + 3y - 2z = 3 \\ & 8x + z = 10 \\ & 4x - 4y + 2z = -9 \end{aligned}$$

Assignment:

Write down 5 problems in daily live that can be represented in a system of linear equations. And then solve them using MATLAB.

10. Reference

Compulsory:

M. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

N. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

O. <http://www.matworks.com/access/helpdesk/help/>

P. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



LESSON PLAN

RPP/MAA 319/05
1 April 2010

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students can solve the problem of polynomial using MATLAB
6. Indicator :
 - Student can:
 - Find the root of polynomial
 - Add and subtract polynomial
 - Multiply and divide polynomial
 - Differentiate and integrate polynomial
 - Evaluate polynomial
 - Draw a graph of polynomial
 - Find the Partial Fraction Expansions
 - Solve Polynomial
 - Find a Curve Fitting
7. Essential Concepts : Computer application for handling polynomial using MATLAB
8. Learning Activity : 9

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:36	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • By following the instruction in handout and using computer, students try some commands for handling polynomial • In pair, students discuss to get the main meaning of the commands • Lecturer gives opportunity to the students to move to others group to get their discussion results. 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	<ul style="list-style-type: none"> Lecturer facilitate students to get more information about the topic 					
Closure	Student and lecturer conclude the discussion of the topic	10'				
Follow up	Students are asked to collect some problems of polynomial from journal, articles, and Internet	5'				

Learning Activity : 10 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> Students practice and doing excercises to solve some problem of polynomial Students share their results on finding some problem of polynomial 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment Appreciative of works and achievements of others
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			
Follow up	Lecturer gives introduction of the next material Students are asked to read the next material in handout and open HELP in MATLAB about the material	5'	Explanation			

9. Assessment

Quiz:

- Find the roots of the polynomial below and draw the graph:
 - $x^2 - 3x + 4 = 0$
 - $x^4 + x^3 + x^2 + x + 1 = 0$
- Determine the new polynomial that the coefficients are got from:
 - polynomial K: the 1st and 2nd element of the result no. 1a.
 - polynomial L: the 2nd and 3rd element of the result no. 1b.
- find the result of multiply, add and divide operations of K and L

- d. find the derivative of $K \times L$
- e. Find partial fraction expansion of the polynomial that formed by polynomial no.1a/1b.

Assignment:

Write down 5 polynomials and draw the graph using MATLAB.

10. Reference

Compulsory:

Q. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

R. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

S. <http://www.matworks.com/access/helpdesk/help/>

T. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/06
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students can draw the 2D graph of mathematics functions using MATLAB
6. Indicator :
 - Student can use plotting elementary functions.
 - Student can use plotting-titles & labels, grids commands
 - Student can change line styles & colors of graph
 - Student can draw multi-plots using hold and subplot commands
 - Student can format text on plots
 - Student can use the commands for controlling axes
 - Student can draw graph type stairs and bar
7. Essential Concepts : Computer application for drawing 2D graph using MATLAB
8. Learning Activity : 11

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:41	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • By following the instruction in handout and using computer, students try some commands for drawing 2D graph • In pair, students discuss to get the main meaning of the commands • After 30 minutes, Lecturer ask students to make a group of 4 (2 pairs) to share their discussion results. • Lecturer facilitate students if they have some problems or questions about the 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	topic <ul style="list-style-type: none"> Students get opportunity to visit the other group the share and compare their result. Students present their conclusion 					
Closure	Student and lecturer conclude the discussion of the topic	10'				
Follow up	Students are asked to collect some problems that use the mathematics functions and draw the graph	5'				

Learning Activity : 12 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> Students practice and do exercises draw the graph of some functions. Students submit their result to the lecturer 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in the handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

Draw graphs of the functions

$$\begin{array}{ll}
 i) & y = \frac{\sin x}{x} \\
 ii) & u = \frac{1}{(x-1)^2} + x \\
 iii) & v = \frac{x^2+1}{x^2-4} \\
 iv) & w = \frac{(10-x)^{1/3}-2}{(4-x^2)^{1/2}}
 \end{array}$$

for $0 \leq x \leq 10$.

10. Reference

Compulsory:

U. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

V. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

W. <http://www.matworks.com/access/helpdesk/help/>

X. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



LESSON PLAN

RPP/MAA 319/07
1 April 2010

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to find the minimum and maximum value of a function using MATLAB
6. Indicator :
 Student can:
 - Plot explicit, implicit and parametric function using ezplot command
 - Plot a function using fplot command
 - Find the minimum value of a function
 - Find the maximum value of a function
 - Find the zero point of a function
7. Essential Concepts : Computer application for finding maximum and minimum value of a function using MATLAB
8. Learning Activity : 13

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:47	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • By following the instruction in handout and using computer, students try some commands to plot a function using ezplot and fplot command • In pair, students discuss to get the main meaning of the commands • Lecturer observes the students activity and gives some comments or explanations. • Students in pairs continue to try the commands to find the 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	minimum, maximum and zero point of a function <ul style="list-style-type: none"> • After 50 minutes, Lecturer ask students to make a group of 4 (2 pairs) to share their discussion results. • Lecturer facilitate students to get the conclusion of the topic 					
Closure	Student and lecturer conclude the discussion of the topic	10'				
Follow up	Students are supposed to solve the problem using the other mathematics software (maple or mathematica)	5'				

Learning Activity : 14 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students practice and do excercises to find minimum, maximum and zero point of some functions. • Students submit their result to the lecturer 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

Find the minimum and maximum value of the functions below:

a. $y_1 = \frac{x|x-1|}{x^2}, y_2 = \frac{x|x-1|}{2+x^2}, y_3 = \frac{x|x-1|}{3-x^2}$

c. $y = x^3 - (x+6)^2 - 2$

e. $h(x) = (1-2x^2)e^{-x^2}$ in $[-2,1]$

g. $g(x) = \frac{\sin(x)}{2+\cos(x)}$ in $[0, 2\pi]$

b. $f(x) = x^{(x^x)} - (x^x)^x$ in $[0,2]$

d. $f(x) = \frac{1}{3}x^3 - x^2 - 3x + 4$

f. $f(x) = x^2 + \frac{1}{x^2}$

10. Reference

Compulsory:

Y. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

Z. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

AA. <http://www.matworks.com/access/helpdesk/help/>

BB. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/08
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to draw 3D graph of a function using MATLAB
6. Indicator :
 - Student can use basic 3-D Plotting
 - Student can plot Matrix Data
 - Student can use functions for Plotting Data Grids
 - Student can plot Surfaces
 - Student can emphasize Surface Shape
 - Student can create a Surface Plots of Nonuniformly Sampled Data
 - Student can draw a parametric Surfaces
7. Essential Concepts : Computer application for drawing 3D graph using MATLAB
8. Learning Activity : 15

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer explains the objective of the topic and gives motivation 	5'	Explanation and Discussion	Computer, LCD	A:52	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students try the commands to plot 3D function and its formatting by following the instruction in handout and using computer, • In pair, students discuss to get the main meaning of the commands • Lecturer observes the students activity and gives some comments or explanations. • Lecturer activates discussion in order students get the important information 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

Closure	about the command and make some notes in handout Lecturer facilitate students to get the conclusion of the topic Student and lecturer conclude the topic	10'				
Follow up	Students are supposed to solve the problem using the other mathematics software (maple or mathematica)	5'				

Learning Activity : 16 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> Students practice and do excercises to plot 3D of some functions. Students share their results on using other software to solve the problem. 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

Draws a wireframe surface of $f(x) = \frac{1}{(x-0.3)^2 + 0.01} + \frac{1}{(x-0.9)^2 + 0.04} - 6$

10. Reference

Compulsory:

CC. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

DD. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

EE. <http://www.matworks.com/access/helpdesk/help/>

FF. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



LESSON PLAN

RPP/MAA 319/09
1 April 2010

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to create a function and find the integral using MATLAB
6. Indicator :
 Student can:
 - Create mathematics function using **inline command**.
 - Create mathematics function using **M-files**
 - Evaluate a value in a function
 - Find the integral of a function
7. Essential Concepts : Computer application for handle function and integral using MATLAB
8. Learning Activity : 17

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting 	5'	Explanation and Discussion	Computer, LCD	B:95	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Lecturer explains the objective of the topic and gives motivation • Students work in pair to discuss the commands to define a function in MATLAB using computer by following the instruction in the handout • Lecturer activates discussion in order students get the important information about the command and make some notes in handout • Lecturer facilitates students to get further information about the topic 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

Closure	Lecturer asks students to share their conclusion about the topic	10'				
Follow up	Students are supposed to solve the problem using the other mathematics software (maple or mathematica)	5'				

Learning Activity : 18 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students practice and do excercises to create their own functions. • Students share their results 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

- a. Given a function:

$$f(x) = \frac{1}{(x-0.3)^2 + 0.01} + \frac{1}{(x-0.9)^2 + 0.04}$$

- b. Define the function using inline and m-file
c. Find the value of f(x) in $0 < x < 5$
d. Find the surface luas area of the function in $0 < x < 2$

10. Reference

Compulsory:

GG. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

- HH. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.
- II. <http://www.matworks.com/access/helpdesk/help/>
- JJ. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/10
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to use symbolic math toolbox in MATLAB
6. Indicator :
Student can:
 - define Variable and Symbolic expression
 - use subs command
 - extract numerator and denominator
 - solve algebra operation.
 - find differential of a one variable function
 - solve limit of a function
 - find integral
 - solve the infinite summation
 - use the Collect, expand and factor command
7. Essential Concepts : Computer application for handle symbolic expression using MATLAB
8. Learning Activity : 19

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer explains the objective of the topic and gives motivation 	5'	Explanation and Discussion	Computer, LCD	A:57	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students execute the commands to solve symbolic function using computer by following the instruction in the handout • In pair, students discuss to get the main meaning of the commands • Lecturer observes the students activity and gives some comments or explanations. • Lecturer activates 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	<p>discussion in order students get the important information about the command and make some notes in handout</p> <ul style="list-style-type: none"> • Lecturer facilitates students to get further information about the topic 					
Closure	Lecturer asks students to share their conclusion about the topic	10'				
Follow up	Students are supposed to solve the problem using the other mathematics software (maple or mathematica)	5'				

Learning Activity : 20 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students practice and do exercises to solve some problems using symbolic math toolbox. • Students submit their result to the lecturer 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

i). Given: $f(x) = \frac{x^2 - 2}{x + 3}$ $g(x) = \frac{x^3 - 2x}{x + 5}$ $h(x) = \frac{2}{x - 1}$

determine:

- a. $f+g$
- b. $f.h$
- c. g/h
- d. $f+h$

- e. $g.h$
- f. numden (f)
- g. $g+h$
- h. f/g

- i. numden (g)
- j. $f.g$
- k. f/h
- l. numden(h)

ii). Given: $f(x) = \frac{x + 3}{3u - 2}$ *and* $g(x) = \frac{u^2}{v - 5}$

Determine :

a. $fog(x)$

b. $gof(x)$

c. $fog(v)$

d. $gof(u)$

iii). Determine of dy/dx and d^2y/dx^2 if given

- a. $y = \{\log(3x + 2)\}^{\sin^{-1}(2x+5)}$
- b. $xy - \log y = 1$
- c. $y = \sin^2(3x + \pi/6)$

10. Reference

Compulsory:

KK. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

LL. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

MM. <http://www.matworks.com/access/helpdesk/help/>

NN. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



LESSON PLAN

RPP/MAA 319/11
1 April 2010

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to use script m-file in MATLAB to solve the all problems of the previous topic
6. Indicator :
 Student can:
 - Make script m-file to solve a simple math problem.
 - Use input command
 - Add comment in a script m-file
 - Use echo command
 - Use disp command
7. Essential Concepts : Computer application for programming in mathematics problem using script m-file in MATLAB
8. Learning Activity : 21

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:65	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • By following the instruction in handout and using computer, students try the commands to make script m-file to solve a mathematics problem • In pair, students discuss to get the main meaning of the commands • After 50 minutes, Lecturer ask students to make a group of 4 (2 pairs) to share their discussion results. 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	<ul style="list-style-type: none"> Lecturer facilitate students if they have some problems or questions about the topic Students get opportunity to visit the other group to share and compare their result. Students present their conclusion 					
Closure	Student and lecturer conclude the topic	10'				
Follow up	Students are asked to find or create the mathematics problem and solve it using script m-file.	5'				

Learning Activity : 22 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets tudents and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> Students practice and excercises to make some script m-file Students share their results in solving some problems using script m-file 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in the handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

Create a script m-file to find the minimum and maximum value of the function $f(x) = x^2 + \frac{1}{x^2}$

10. Reference

Compulsory:

OO. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

PP.Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

QQ. <http://www.matworks.com/access/helpdesk/help/>

RR. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/12
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to make a program to solve mathematics problem using loop command in MATLAB
6. Indicator :
Student can:
 - make a program to solve loop problem using for-end command in MATLAB
 - make a program to solve loop problem using while-end command in MATLAB
 - convert the program that uses for-end command into while-end command
7. Essential Concepts : Computer application for handle loop problems using for-end and while-end command in MATLAB
8. Learning Activity : 23

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:70	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students try the script m-file to solve a problem using for-end and while-end command by following the instruction in handout • In pair, students discuss the difference between for-end and while-end command. • After 30 minutes, Lecturer ask students to make a group of 4 (2 pairs) to share their discussion results. • Lecturer facilitate students if they have some problems or questions about the 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

	topic <ul style="list-style-type: none"> • Students get opportunity to visit the other group to share and compare their result. • Students present their conclusion 					
Closure	Lecturer asks students to share their conclusion about the topic	10'				
Follow up	Students get task to find or create their own problem to be solved using for-end and while-end command	5'				

Learning Activity : 24 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students practice and exercises to make some script m-file that solve problem using for-end and while-end command. • Students share their results 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			Appreciative of works and achievements of others
Follow up	Lecturer gives introduction of the next material Students are asked to read the next topic in the handout and open HELP in MATLAB about the topic	5'	Explanation			

9. Assessment

Quiz:

Write a for-end and while-end loop to display the following output

```
1
22
333
4444
55555
```

10. Reference

Compulsory:

SS. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

TT. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

UU. <http://www.matworks.com/access/helpdesk/help/>

VV. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

LESSON PLAN

**RPP/MAA 319/13
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to make a program to solve mathematics problem that contains selection condition in MATLAB
6. Indicator :
Student can:
 - make a program to solve a problem using if-end command in MATLAB
 - make a program to solve a problem using if-elseif-end command in MATLAB
7. Essential Concepts : Computer application for handle selection condition problems using if-end and if-elseif-end in MATLAB
8. Learning Activity : 25

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:74	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students try the script m-file to solve a problem using if-end and if-elseif-end command by following the instruction in handout • In pair, students discuss the meaning of the command. • After 50 minutes, Lecturer ask students to make a group of 4 (2 pairs) to share their discussion results. • Lecturer facilitate students if they have some problems or questions about the topic • Students get 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

Closure	<p>opportunity to visit the other group to share and compare their result.</p> <ul style="list-style-type: none"> Students present their conclusion <p>Lecturer asks students to share their conclusion about the topic</p>	10'				
Follow up	<p>Students get assignment to find or create their own problem to be solved using if-end and if-elseif-end command</p>	5'				

Learning Activity : 26 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> Students exchange their problem as the result of assignment in the last meeting Students work in a pair to solve their friend problems, i.e. to make some script m-file using if-end and if-elseif-end command. Students share their results 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			
Follow up	Lecturer gives motivation to the students to explore the all discussed material by themselves	5'	Explanation			

9. Assessment

Quiz:

Write a script to find the largest number among three number A, B and C

10. Reference

Compulsory:

WW. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

XX. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

YY. <http://www.matworks.com/access/helpdesk/help/>

ZZ. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001



LESSON PLAN

**RPP/MAA 319/14
1 April 2010**

1. Faculty /Study Program : Mathematics and Science/Mathematics Education
2. Course & Code : Computer Application, MAA311
3. Credit : Theory : 2 sks Practice: 1 sks
4. Semester/Time : IV Time: 100 minutes
5. Basic competence : Students are able to make a program to solve mathematics problem that contain selection condition in MATLAB
6. Indicator :
Student can:
 - make a program to solve loop problem using switch-case command in MATLAB
 - explain the difference of usage of if-elseif-end command and switch-case command
7. Essential Concepts : Computer application for handle selection condition problems using switch-case command in MATLAB
8. Learning Activity : 27

Component	Detail Activity	Time	Method	Media	References	Character
Opening	<ul style="list-style-type: none"> • Lecturer greets the students and asks some students to tell some important points of the topic in the last meeting • Lecturer describes its relation to the next topic. 	5'	Explanation and Discussion	Computer, LCD	A:75	Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students try the commands to solve a problem using switch-case command by following the instruction in handout • In pair, students discuss the difference between if-elseif-end and switch-case command. • After 50 minutes, Lecturer ask students to make a group of 4 (2 pairs) to share their discussion results. • Lecturer facilitate students if they have some problems or questions about the topic 	80'	Explanation Demonstration, Discussion, practice, group work			Caring about social matters and environment Appreciative of works and achievements of others

Closure	<ul style="list-style-type: none"> • Students get opportunity to visit the other group to share and compare their result. • Students present their conclusion <p>Lecturer asks students to share their conclusion about the topic</p>	10'				
Follow up	Students get assignment to find or create their own problem to be solved using switch-case command	5'				

Learning Activity : 28 (practice, 1 sks practice = 100')

Component	Detail Activity	Time	Method	Media	References	Character
Opening	Lecturer greets students and asks some students to tell the main idea of last topic, and delivers a lab sheet	5'	Explanation and Discussion	Computer, worksheet		Thinking logically, critically, creatively, and innovatively
Main Activities	<ul style="list-style-type: none"> • Students exchange their problem as the result of assignment in the last meeting • Students work in a pair to solve their friend problems, i.e. to make some script m-file using switch-case command. • Students share their results 	80'	Practicum using computer, by self/in a group		worksheet / quiz	Caring about social matters and environment Appreciating diversity Appreciative of works and achievements of others
Closure	Lecturer gives feedback to the result of students' work	10'	Explanation			
Follow up	Lecturer gives motivation to the students to explore the all discussed material by themselves	5'	Explanation			

9. Assessment

Quiz:

Write a script using switch-case command with the input and output as stated below:

The input are 2 numbers and 1 operator (+, -, /, *).

The output is a number as arithmetic operation of the 2 numbers using the operator.

10. Reference

Compulsory:

AAA. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009

Additional:

BBB. Hanselman, D. & Littlefield, B. 2000. Mastering MATLAB, A Comprehensive Tutorial and Reference. Prentice-Hall International, Inc.

CCC. <http://www.matworks.com/access/helpdesk/help/>

DDD. <http://www.math.siu.edu/matlab/tutorial2.pdf>

Yogyakarta, 21 December 2010
Lecturer,

Sri Andayani, M.Kom
NIP 19720426 199702 2 001