YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCE

LESSON PLAN

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	• 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 Caring about social matters and environment Appreciative of works and achievements of others
Main Activities	• 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			

| 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' | | | | |

- topic
- Students get opportunity to visit the other group the share and compare their result.
- Students present their conclusion

Learning Activity : 12 (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	• Students practice and do excercises 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

i) $y = \frac{\sin x}{x}$ ii) $u = \frac{1}{(x-1)^2} + x$

iii) $v = \frac{x^2+1}{x^2-4}$ iv) $w = \frac{(10-x)^{1/3} - 2}{(4-x^2)^{1/2}}$

for $0 \le x \le 10$.

10. Reference
   Compulsory:

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

   Additional:

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

Yogyakarta, 21 December 2010
Professor,

Sri Andayani, M.Kom
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