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  

<table>
<thead>
<tr>
<th>Component</th>
<th>Detail Activity</th>
<th>Time</th>
<th>Method</th>
<th>Media</th>
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<th>Character</th>
</tr>
</thead>
</table>
| Opening         | • 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  
                 • 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 | 5’   | Explanation and Discussion        | Computer, LCD  | B:95       | Thinking logically, critically, creatively, and innovatively  
                 |                                                                                 | 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’)

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</tr>
</thead>
<tbody>
<tr>
<td>Opening</td>
<td>Lecturer greets students and asks some students to tell the main idea of last topic, and delivers a lab sheet</td>
<td>5’</td>
<td>Explanation and Discussion</td>
<td>Computer, worksheet</td>
<td>Thinking logically, critically, creatively, and innovatively</td>
<td></td>
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<tr>
<td>Main Activities</td>
<td>• Students practice and do exercises to create their own functions. • Students share their results</td>
<td>80’</td>
<td>Practicum using computer, by self/in a group</td>
<td>worksheet / quiz</td>
<td>Caring about social matters and environment</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Lecturer gives feedback to the result of students’ work</td>
<td>10’</td>
<td>Explanation</td>
<td></td>
<td>Appreciative of works and achievements of others</td>
<td></td>
</tr>
<tr>
<td>Follow up</td>
<td>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</td>
<td>5’</td>
<td>Explanation</td>
<td></td>
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</tbody>
</table>

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:
   A. Sri Andayani, Handout of Computer Application, FMIPA UNY 2009
Additional:
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
NIP 19720426 199702 2 001