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

<table>
<thead>
<tr>
<th>Component</th>
<th>Detail Activity</th>
<th>Time</th>
<th>Method</th>
<th>Media</th>
<th>References</th>
<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  
                    • 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  
                    |                                                                                                   |      |                             |                               |            | Caring about social matters and environment                              |
| Main Activities    | • 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 |                               |            | Appreciative of works and achievements of others                         |
of the command, make some notes in handout and conclusions
- Lecturer facilitate students to get more information about the material

<table>
<thead>
<tr>
<th>Closure</th>
<th>Student and lecturer conclude the discussion of the topic</th>
<th>10’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow up</td>
<td>Students are asked to collect some problems of systems of linear equations from journal, articles, and Internet</td>
<td>5’</td>
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</tbody>
</table>

Learning Activity : 8 (practice, 1 sks practice = 10’)

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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 Lecturer 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>
</tr>
<tr>
<td>Main Activities</td>
<td>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</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></td>
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</tr>
<tr>
<td>Follow up</td>
<td>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</td>
<td>5’</td>
<td>Explanation</td>
<td></td>
<td>Appreciative of works and achievements of others</td>
<td></td>
</tr>
</tbody>
</table>
9. Assessment

**Quiz:**
- Solve the systems of linear equation below:

  1. \[3x_1 - x_2 + 2x_3 = 10\]
     \[3x_2 - x_3 = 15\]
     \[2x_1 + x_2 - 2x_3 = 0\]

  2. \[-1x + 7y + 5z = 12\]
     \[6x + 3y - 2z = 3\]
     \[8x + z = 10\]
     \[4x - 4y + 2z = -9\]

  3. \[-2x_1 + x_2 + 5x_3 = 1\]
     \[3x_2 - x_3 = 4\]
     \[8x_1 + 2x_2 = 5\]

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

  Additional:

Yogyakarta, 21 December 2010
Professor,

Sri Andayani, M.Kom
NIP 197204261997022001