

# LESSON PLAN

| Period | Date (Tentative) | Topic   | Unit No. | Teaching Methodology | Remarks | Corrective Action Upon Review |
|--------|------------------|---|----------|----------------------|---------|-------------------------------|
| 1.     | 13/2/14          | Introduction to System modeling & Simulation                  | I        | PPT                  |         |                               |
| 2.     | 14/2/14          | Systems, models & Simulation                                  |          | "                    |         |                               |
| 3.     | 15/2/14          | Discrete event simulation                                     |          | "                    |         |                               |
| 4.     | 20/2/14          | ← do →  |          | "                    |         |                               |
| 5.     | 21/2/14          | Simulation of Single server queueing system                   |          | "                    |         |                               |
| 6.     | 22/2/14          | ← do →  |          | "                    |         |                               |
| 7.     | 23/2/14          | Steps involved in simulation study                            |          | "                    |         |                               |
| 8.     | 28/2/14          | Alternative approach to modeling & simulation                 |          | "                    |         |                               |
| 9.     | 1/3/14           | Advantages of Simulation                                      |          | "                    |         |                               |
| 10.    | 6/3/14           | Introduction to simulation software                           | II       | "                    |         |                               |
| 11.    | 7/3/14           | Comparison of simulation packages with programming languages. |          | "                    |         |                               |
| 12.    | 8/3/14           | Classification of simulation software                         |          | "                    |         |                               |
| 13.    | 13/3/14          | Desirable software features                                   |          | "                    |         |                               |
| 14.    | 14/3/14          | ← do →  |          | "                    |         |                               |
| 15.    | 15/3/14          | General purpose simulation packages Arena, Pritan & others    |          | "                    |         |                               |
| 16.    | 20/3/14          | ← do →  |          | "                    |         |                               |
| 17.    | 21/3/14          | Object oriented simulation                                    |          | "                    |         |                               |
| 18.    | 22/3/14          | Examples of application oriented simulation packages          |          | "                    |         |                               |
| 19.    | 23/3/14          | Guidelines for determining levels of model detail             | III      | "                    |         |                               |
| 20.    | 28/3/14          | Techniques for increasing model validity & credibility        |          | "                    |         |                               |

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|--------|---------------------|--|-------------|-------------------------|---------|----------------------------------|
| 21.    | 29/3/14             | ← do →   | <u>III</u>  | PPT                     |         |                                  |
| 22.    | 3/4/14              | Modeling time driven<br>System: Modeling input<br>signals, delays  |             | "                       |         |                                  |
| 23.    | 4/4/14              | System integration   |             | "                       |         |                                  |
| 24.    | 5/4/14              | Linear Systems   |             | "                       |         |                                  |
| 25.    | 10/4/14             | Motion Control models<br>Numerical experiments                     |             | "                       |         |                                  |
| 26.    | 19/4/14             | EXOGENOUS signal generators<br>: Disturbance inputs                | <u>IV</u>   | "                       |         |                                  |
| 27.    | 29/4/14             | State machines,<br>petri nets and analysis                         |             | "                       |         |                                  |
| 28.    | 25/4/14             | System encapsulation   |             | "                       |         |                                  |
| 29.    | 26/4/14             | Probabilistic systems,<br>discrete time markov<br>processes        |             | "                       |         |                                  |
| 30.    | 1/5/14              | Random walks   |             | "                       |         |                                  |
| 31.    | 2/5/14              | Poisson process, the<br>Exponential distribution                   |             | "                       |         |                                  |
| 32.    | 3/5/14              | Simulating a poisson<br>process, Continuous<br>time markov process |             | "                       |         |                                  |
| 33.    | 8/5/14              | Simulation diagrams,<br>Queueing theory                            | <u>V</u>    | "                       |         |                                  |
| 34.    | 9/5/14              | Simulating queueing<br>systems                                     |             | "                       |         |                                  |
| 35.    | 10/5/14             | Types of queues  |             | "                       |         |                                  |
| 36.    | 15/5/14             | Multiple servers   |             | "                       |         |                                  |
| 37.    | 16/5/14             | ← do →   |             | "                       |         |                                  |
| 38.    | 17/5/14             | Systems Identification   | <u>VI</u>   | "                       |         |                                  |
| 39.    | 22/5/14             | Searches, A*/b*<br>techniques                                      |             | "                       |         |                                  |
| 40.    | 23/5/14             | Multi dimensional<br>optimization                                  |             | "                       |         |                                  |



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