

**The Faculty of Mathematics and Information Science, Warsaw University of  
Technology, Graduate Program (M.Sc) in Computer Science  
(valid from 2011-10-01)**

**Semester 1/2 - WINTER**

| No                | Course                                    | ECTS      | Lc | E         | L | P | Exam     |
|-------------------|---|-----------|----|-----------|---|---|----------|
| <b>Obligatory</b> |   |           |    |           |   |   |          |
| 1.                | Calculus - Advances                       | 4         | 2  | 2         | 0 | 0 | E        |
| 2.                | Advanced Algorithms                       | 4         | 2  | 0         | 0 | 1 | E        |
| 3.                | Advanced Topics in Mathematics (elective) | 4         | 2  | 0         | 1 | 0 |          |
| 4.                | Data Compression                          | 3         | 2  | 0         | 1 | 0 |          |
| 5.                | Humanities Seminar                        | 2         | 0  | 2         | 0 | 0 |          |
| Total:            |   | <b>17</b> |    |           |   |   | <b>2</b> |
| Hours - total:    |   |           |    | <b>15</b> |   |   |          |

**Artificial Intelligence**

|                |   |           |   |           |          |          |          |
|----------------|---|-----------|---|-----------|----------|----------|----------|
| 1.             | Software Testing                              | 4         | 1 | 1         | 1        | 0        | E        |
| 2.             | Image and Speech Recognition                  | 5         | 2 | 1         | 1        | 0        |          |
| 3.             | Programming in Logic and Symbolic Programming | 4         | 1 | 0         | <b>0</b> | <b>2</b> |          |
| Total:         |   | <b>13</b> |   |           |          |          | <b>1</b> |
| Hours - total: |   |           |   | <b>10</b> |          |          |          |

**Computing in Business and Economics**

|                |  |           |   |           |   |   |          |
|----------------|--|-----------|---|-----------|---|---|----------|
| 1.             | Techniques of Survey Sampling                    | 5         | 2 | 1         | 0 | 1 | E        |
| 2.             | Data Management and Analysis with the SAS System | 4         | 2 | 0         | 2 | 0 |          |
| 3.             | Intelligent Data Analysis                        | 4         | 2 | 0         | 1 | 0 |          |
| Total:         |  | <b>13</b> |   |           |   |   | <b>1</b> |
| Hours - total: |  |           |   | <b>11</b> |   |   |          |

**Semester 1/2 - SUMMER**

| No                | Course   | ECTS      | Lc | E         | L | P | Exam     |
|-------------------|--|-----------|----|-----------|---|---|----------|
| <b>Obligatory</b> |  |           |    |           |   |   |          |
| 1.                | Elements of Modern Physics                                       | 4         | 2  | 1         | 0 | 0 |          |
| 2.                | High Performance Computing                                       | 4         | 2  | 0         | 2 | 0 |          |
| 3.                | Institutions of the European Union /<br>Institution of Democracy | 2         | 0  | 2         | 0 | 0 |          |
| 4.                | Diploma Seminar * (SEM.2)  | 2         | 0  | 2         | 0 | 0 |          |
| Total:            |  | <b>12</b> |    |           |   |   | <b>0</b> |
| Hours - total:    |  |           |    | <b>11</b> |   |   |          |

**Artificial Intelligence**

|                |  |           |   |           |   |   |          |
|----------------|--|-----------|---|-----------|---|---|----------|
| 1.             | Electives x 2                          | 8         |   | 6         |   |   |          |
| 2.             | Knowledge Representation and Reasoning | 5         | 2 | 0         | 2 | 0 | E        |
| 3.             | Neural Networks                        | 5         | 2 | 0         | 2 | 0 | E        |
| Total:         |  | <b>18</b> |   |           |   |   | <b>2</b> |
| Hours - total: |  |           |   | <b>14</b> |   |   |          |

**Computing in Business and Economics**

|                |                                      |           |   |           |   |   |          |
|----------------|--------------------------------------|-----------|---|-----------|---|---|----------|
| 1.             | Electives x 2                        | 8         |   | 6         |   |   |          |
| 2.             | Risk Theory and Insurance App.       | 5         | 2 | 1         | 0 | 1 | E        |
| 3.             | Mathematics of Financial Derivatives | 5         | 2 | 1         | 0 | 1 | E        |
| Total:         |                                      | <b>18</b> |   |           |   |   | <b>2</b> |
| Hours - total: |                                      |           |   | <b>14</b> |   |   |          |

**Semester 3**

| No                | Course                 | ECTS      | Lc | E         | L | P | Exam |
|-------------------|------------------------|-----------|----|-----------|---|---|------|
| <b>Obligatory</b> |                        |           |    |           |   |   |      |
| 1.                | Electives x 3          | 12        |    | 9         |   |   |      |
| 3                 | Diploma Seminar        | 2         | 0  | 2         | 0 | 0 |      |
| 4                 | MSc Thesis Preparation | 16        | 0  | 0         | 0 | 0 |      |
| Total:            |                        | <b>30</b> |    |           |   |   |      |
| Hours - total:    |                        |           |    | <b>11</b> |   |   |      |

**Additionally, there are 180 hours in sem. 3 for Master Thesis preparation**