

# COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2007/2008

Degree Computer Science and Engineering

Centre Technical College  
Campus de Cantoblanco  
28049 – Madrid  
Phone: 91 497 22 23/ 22 26  
<http://www.eps.uam.es>

Academic Credits 300

1<sup>st</sup> and 2<sup>nd</sup> cycle

| Total Credits | Compulsory Credits | Optional Credits | Free Election Credits | Total |
|---------------|--------------------|------------------|-----------------------|-------|
| First Cycle   | 136                | 14(*)            | (*)                   | 150   |
| Second Cycle  | 80                 | 70(*)            | (*)                   | 150   |
| Total         | 216                | 84               |                       | 300   |

## FIRST CYCLE

|              |                          |                        |                             |
|--------------|--------------------------|------------------------|-----------------------------|
| First Course | Compulsory Credits<br>75 | Optional Credits<br>-- | Free Election Credits<br>-- |
|--------------|--------------------------|------------------------|-----------------------------|

| Code  | Subject                                  | Type | Credits | Semester |
|-------|--|------|---------|----------|
| 10879 | Algebra I                                | (Tr) | 7,5     | 1        |
| 10880 | Mathematical Analysis I                  | (Tr) | 7,5     | 1        |
| 10881 | Physics I                                | (Ob) | 7,5     | 1        |
| 10882 | Introduction to Computer Science         | (Ob) | 7,5     | 1        |
| 10883 | Programming Methodology and Technology I | (Tr) | 7,5     | 1        |
| 10884 | Algebra II                               | (Ob) | 7,5     | 2        |
| 10885 | Mathematical Analysis II                 | (Ob) | 7,5     | 2        |
| 10886 | Physics II                               | (Tr) | 7,5     | 2        |
| 10887 | Introduction to Data Structures          | (Tr) | 7,5     | 2        |
| 10888 | Computer Structure and Technology I      | (Tr) | 7,5     | 2        |

|               |                          |                           |                              |
|---------------|--------------------------|---------------------------|------------------------------|
| Second Course | Compulsory Credits<br>61 | Optional Credits<br>14(*) | Free Election Credits<br>(*) |
|---------------|--------------------------|---------------------------|------------------------------|

| Code  | Subject                                   | Type | Credits | Semester |
|-------|---|------|---------|----------|
| 11065 | Programming Methodology and Technology II | (Tr) | 7,5     | 1        |
| 11066 | Computer Structure and Technology II      | (Tr) | 7,5     | 1        |
| 11067 | Electronics                               | (Tr) | 7,0     | 1        |
| 11068 | Discrete Mathematics                      | (Tr) | 7,5     | 1        |
| 11070 | Operating Systems I                       | (Tr) | 7,5     | 2        |
| 11071 | Data Structures II                        | (Tr) | 7,5     | 2        |
| 11072 | Theory of Automata and Formal Languages I | (Tr) | 9,0     | 2        |
| 11073 | Statistics                                | (Tr) | 7,5     | 2        |

### Optional Subjects Offer

| Code  | Subject                       | Type | Credits | Semester |
|-------|-------------------------------|------|---------|----------|
| 11069 | General Economics             | (Op) | 7,0     | 1        |
| 11074 | Business Economics            | (Op) | 7,0     | 2        |
| 15295 | Theory of Systems and Control | (Op) | 7,0     | 2        |

## SECOND CYCLE

|                     |                                 |                                   |                                     |
|---------------------|---------------------------------|-----------------------------------|-------------------------------------|
| <b>Third Course</b> | <b>Compulsory Credits</b><br>47 | <b>Optional Credits</b><br>28 (*) | <b>Free Election Credits</b><br>(*) |
|---------------------|---------------------------------|-----------------------------------|-------------------------------------|

| Code  | Subject                 | Type | Credits | Semester |
|-------|-------------------------|------|---------|----------|
| 11330 | Computer Architecture   | (Tr) | 9,0     | 1        |
| 11331 | Artificial Intelligence | (Tr) | 7,5     | 1        |
| 11332 | Computer Networks I     | (Tr) | 7,0     | 1        |
| 11336 | Language Processors     | (Tr) | 9,0     | 2        |
| 11337 | Knowledge Engineering   | (Tr) | 7,5     | 2        |
| 11338 | Computer Networks II    | (Tr) | 7,0     | 2        |

### Optional Subjects Offer (Third Course)

| Code  | Subject  | Type | Credits | Semester |
|-------|--|------|---------|----------|
| 11333 | Algorithm Analysis   | (Op) | 7,0     | 1        |
| 11334 | Scientific Computation I   | (Op) | 7,0     | 1        |
| 11335 | Advanced Topics in Computer Science I (Multimedia)                   | (Op) | 7,0     | 1        |
| 11341 | Digital Circuits Structure and Design                                | (Op) | 7,0     | 1        |
| 13509 | Computer Systems II  | (Op) | 7,0     | 1        |
| 11339 | Scientific Computation II  | (Op) | 7,0     | 2        |
| 11340 | Advanced Topics in Computer Engineering I (Logic)                    | (Op) | 7,0     | 2        |
| 13506 | Object-Oriented Programming  | (Op) | 7,0     | 2        |
| 13507 | Advanced Topics in Computer Science III (Pattern Recognition)        | (Op) | 7,0     | 2        |
| 13508 | Advanced Topics in Computer Architecture I (Digital Sign Processing) | (Op) | 7,0     | 2        |

|                      |                                 |                                  |                                     |
|----------------------|---------------------------------|----------------------------------|-------------------------------------|
| <b>Fourth Course</b> | <b>Compulsory Credits</b><br>33 | <b>Optional Credits</b><br>42(*) | <b>Free Election Credits</b><br>(*) |
|----------------------|---------------------------------|----------------------------------|-------------------------------------|

| Code  | Subject                 | Type | Credits | Semester |
|-------|-------------------------|------|---------|----------|
| 11342 | Software Engineering I  | (Tr) | 7,5     | 1        |
| 11343 | Computer Systems I      | (Tr) | 7,5     | 1        |
| 11348 | Software Engineering II | (Tr) | 10,5    | 2        |
| 11349 | Computer Systems II     | (Tr) | 7,5     | 2        |

Optional Subjects Offer (Fourth Course)

| Code  | Subject   | Type | Credits | Semester |
|-------|---|------|---------|----------|
| 11346 | Fundamentals of Neurocomputation  | (Op) | 7,0     | 1        |
| 11347 | Advanced Topics in Computer Science II (Object-Oriented Programming II) | (Op) | 7,0     | 1        |
| 11350 | Theory of Automata and Formal Languages II                              | (Op) | 7,0     | 1        |
| 12487 | Practicum   | (Op) | 7,0     | 1        |
| 13633 | Advanced Topics in Computing Engineering III                            | (Op) | 7,0     | 1        |
| 13635 | Advanced Topics in Computer Architecture II (Networks III)              | (Op) | 7,0     | 1        |
| 11344 | Graphics  | (Op) | 7,0     | 2        |
| 11345 | Computer Simulation and Modelling                                       | (Op) | 7,0     | 2        |
| 11351 | Advanced Topics in Computing Engineering II (Parallel Computation)      | (Op) | 7,0     | 2        |
| 12488 | Practicum   | (Op) | 7,0     | 2        |
| 13632 | Advanced Topics in Computer Science IV (Cryptography)                   | (Op) | 7,0     | 2        |
| 13634 | Advanced Topics in Computing Engineering IV (Robotics)                  | (Op) | 7,0     | 2        |

(Tr): Troncal = Compulsory Credits

(Ob): Obligatorio = Compulsory Credits

(Op): Optativo = Optional Credits