Uni Ulm, exchange student, Programming Concepts for Cognitive Sys. (Modul: 746 48)
Part of the form for Study Achievement Recognition Page 1

<table>
<thead>
<tr>
<th>Achievement</th>
<th>Grade/CP/workload</th>
<th>Yes/No</th>
<th>Exam number</th>
<th>Recognition</th>
<th>Denial/Reasons</th>
</tr>
</thead>
</table>

**Modul details (cut-out)**

- **Module:** Programming Concepts for Cognitive Systems
- **Code:** 8827974648
- **ECTS credits:** 6
- **Attendance time:** 4
- **Language of instruction:** Deutsch
- **Duration:** 1 Semester

Cut-out of the Campus Management System for the suggested recognition (here for MSc Cognitive Systems)
Part of the form for Study Achievement Recognition Page 1

### Remark 1: Combination of Achievements
A recognition can be composed of several achievements (here: the two modules "Introduction to Computer Science I - Fundamentals" and "Introduction to Computer Science II – Advanced Concepts", each 6 ETCS) and can result in multiple recognized exams (here 102 50 – "Praktische Informatik" and 108 50 – "Einführung in die Informatik") within one module.

### Remark 2: Credit Points
The number of achieved credit points (in ECTS, here 12) must be higher than or equal to the number of recognized credit points (ECTS, here 8). Non-ECTS credits must be converted to ECTS. A proof of the work load associated with each achieved non-ECTS credit is to be provided by the applicant.

### Remark 3: Exam numbers and pre-requisites for exams
Some exams at the University of Ulm have pre-requisites. To recognize an exam with a pre-requisite, also the exam number of the pre-requisite exam is to be listed. Exam numbers can only be found via "Browse Modul Descriptions" in the Campus Management System and not via "Search in Modules".

<table>
<thead>
<tr>
<th>Application number: 01</th>
<th>Recognized exam</th>
<th>Grade/CP/workload</th>
<th>Exam number</th>
<th>Recognition in area (compulsory elective, specialisation, core subject, etc.)</th>
<th>Denial/Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uni Ulm, exchange student, Introduction to Computer Science I + II Modul: 710 70 + 710 77</td>
<td>grade CP WL</td>
<td>3.0 12 8</td>
<td>yes</td>
<td>102 50 108 50</td>
<td>no no no</td>
</tr>
</tbody>
</table>

**Uni Ulm, exchange student, Introduction to Computer Science I + II**

**Modul: 710 70 + 710 77**

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**Modul: 710 70 + 710 77**
### Part of the form for Study Achievement Recognition Further Pages

**Achievements to be recognized:**

<table>
<thead>
<tr>
<th>Grade/CP/Workload</th>
<th>Recognition</th>
<th>Denial/Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exam number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>in area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(compulsory elective, specialisation, core subject, etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grade</td>
<td>CP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>significant difference in acquired competences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>incomplete documents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to be decided later</td>
<td></td>
</tr>
</tbody>
</table>

### The following achievements have been completed (module/exam)

<table>
<thead>
<tr>
<th>Aalto University, BSc Computer Science</th>
<th>Planning &amp; Reasoning - Special Sub. Recognition without equivalent</th>
<th>1,7</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated reasoning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS-E5610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRD 4,0</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CP 6</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>WL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remark 1: Automated Reasoning, Recognition without equivalent

Courses from *other* universities may be recognized in *elective areas* without an equivalent if no matching course exists at the University of Ulm and if the course could be offered within the elective area.

### Anmerkung 3: Grade conversion

Grades from a different grading scale are converted according to the Bavarian Formula: \[ N = 1 + 3 \cdot \frac{P_{\text{max}} - P}{P_{\text{max}} - P_{\text{min}}} \] with \( N \) representing the converted grade, \( P \) the grade as in the transcript, \( P_{\text{min}} \) and \( P_{\text{max}} \) the minimal and maximal possible grades. For the Aalto University the grades are from 0 (fail) – 5, hence we have here, \[ 1 + 3 \cdot \frac{5 - 4}{5 - 0} = 1,6. \] Please provide the documents relevant for the conversion.
### Part of the form for Study Achievement Recognition Further Pages

**Achievements to be recognized:**

<table>
<thead>
<tr>
<th>The following achievements have been completed (module/exam)</th>
<th>Grade/CP/Workload</th>
<th>Recognition</th>
<th>Denial/Reasons</th>
</tr>
</thead>
</table>
| **TU Vienna, MSc Computational Logic Algorithms and Data Structures (186.13)** | GRD 4,0  
CP 6  
WL 4 | | |
| **Free University of Bolzano, BSc Computer Science, Object-orientierted Programming, Modul 63611** | GRD 4,0  
CP 10  
WL - | | |

The following table contains the achieved grades, ECTS, and the corresponding course names and exam numbers:

<table>
<thead>
<tr>
<th>Theoretical Methods in CS, Algorithms and Data Structures</th>
<th>Modul: 703 18</th>
<th>4,0</th>
<th>8</th>
<th>yes</th>
<th>no</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Praktische Informatik, Einführung in die Informatik</td>
<td>Modul: 703 19</td>
<td>4,0</td>
<td>8</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

### Remark 1: Algorithms and Data Structures

Since the course "Algorithms and Data Structures" has 8 ECTS at the University of Ulm, but the course completed at TU Vienna has only 6 ETCS, the course cannot be recognized as equivalent.

### Remark 2: Object-orientierted Programming

The module description of "Object-oriented Programming" shows the taught competences are only partly overlapping the taught in module 703 19 "Einführung in die Informatik" at the University of Ulm. Even though the number of achieved credits is larger (10 > 8), a recognition is not possible since "Einführung in die Informatik" is a mandatory course and an exact match of the taught contents is required for mandatory courses.