## Module description

**Module title**  
Computer Science for Space Engineering

**Abbreviation**  
10-I=CSSE1-182-m01

**Module coordinator**  
holder of the Chair of Computer Science VII

**Module offered by**  
Institute of Computer Science

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<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
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<tbody>
<tr>
<td>5</td>
<td>numerical grade</td>
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**Duration**  
1 semester

**Module level**  
graduate

**Other prerequisites**  
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### Contents

The topics of this course cover the broad spectrum that is needed for programming satellite systems. This includes close-to hardware programming as well as high level topics such as virtual machines and concurrency. Algorithms and data structures form the frame, where the special topics of computer science for space engineering are taught.

### Intended learning outcomes

In this lecture the students should learn advanced concepts of computer science. In addition to low-level programming and programming in C and C++, object oriented syntax and semantics of programming languages and efficient data structures are in focus of the course. In practical programming tasks/assignments within this module, students will be made familiar with virtual machines, such that they are enabled to set up their own virtual machine for a satellite system.

### Courses

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<th>(type, number of weekly contact hours, language — if other than German)</th>
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Module taught in: English

**Method of assessment**  
(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

- written examination (approx. 90 to 120 minutes)
- Language of assessment: English
- creditable for bonus

**Allocation of places**  
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### Additional information

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**Workload**  
150 h

**Teaching cycle**  
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**Referred to in LPO I**  
(examination regulations for teaching-degree programmes)

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**Module appears in**  
Master’s degree (1 major) Satellite Technology (2018)