# **COURSE DETAIL**

# **INTRODUCTION TO CAMERA GEOMETRY**

# **Country**

Germany

#### **Host Institution**

Technical University Berlin

# Program(s)

Technical University Berlin

#### **UCEAP Course Level**

**Upper Division** 

# **UCEAP Subject Area(s)**

**Computer Science** 

### **UCEAP Course Number**

135

### **UCEAP Course Suffix**

#### **UCEAP Official Title**

INTRODUCTION TO CAMERA GEOMETRY

# **UCEAP Transcript Title**

**CAMERA GEOMETRY** 

# **UCEAP Quarter Units**

4.50

#### **UCEAP Semester Units**

3.00

### **Course Description**

The course is an introduction to the geometry of the image formation process and how visual data is represented and manipulated in a computer. Students learn projective geometry, which helps model the perspective projection, and digital image processing. Topics include how to model the perspective operation that happens when a picture is taken (projective geometry, image formation process), how pictures (visual data) are represented and processed in a computer (digital image processing), how to find out the internal geometric parameters of a camera (camera calibration), and what applications camera technology has in robotics (stereopsis, visual odometry, AR/VR, etc.).

### Language(s) of Instruction

English

#### **Host Institution Course Number**

41060

#### **Host Institution Course Title**

INTRODUCTION TO CAMERA GEOMETRY

### **Host Institution Campus**

**Host Institution Faculty** 

### **Host Institution Degree**

# **Host Institution Department**

Institut für Technische Informatik und Mikroelektronik

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