Inventory: AR related courses at KABK, TU Delft and Leiden University

Please note that some courses have specific participation requirements.

KABK/Royal Academy of Art, The Hague

- **Introductory Course 3D Animation**

  The course '3D animation' focuses on modelling and animation techniques in 3D. This provides a good basis for visual AR (where 3D models are integrated in the view of the real environment).

  Link: [http://www.kabk.nl/pageEN.php?id=0451](http://www.kabk.nl/pageEN.php?id=0451)

- **Introductory Course Game Design**

  The introductory course Game Design aims to combine 3D environments and interaction. The course teaches you about developing with the game engine Unity. Unity is ideal for working with AR.

  Link: [http://www.kabk.nl/pageEN.php?id=0452](http://www.kabk.nl/pageEN.php?id=0452)

- **Spatial Interaction Lab (Koninklijk Conservatorium)**

  The Spatial Interaction lab is an artistic research and development laboratory focusing on interaction in physical space. In many institutes and companies research is taking place in the field of Human Computer Interaction. The Spatial Interaction Lab has a different focus that is more oriented on interaction in or with a space; interactive art that interacts with the participant in space. The lab is both a place for the development of concepts and interaction models and a place for the practical development of interfaces and interfacing techniques.


TU Delft/Delft University of Technology

- **Advanced prototyping for design**

  In this course, students learn about methods and techniques of designing, creating and applying advanced prototypes. They will apply these in a research context where digital techniques are required: Rapid Prototyping, Augmented Prototyping, 3D scanning.

  Note that the curriculum is limited to 42 Bsc students and is normally full within 1 hour after registration opens. Also note, that the course language is Dutch. Details are found [here](http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=30026).

  Link: [http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=30026](http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=30026)

- **Data Visualization**

  Data visualization is the visual representation of large quantities of data by computer-generated images. The data sets can be results of numerical simulations or measurements (scientific visualization), or other data collections such as large databases (information visualization). In this course, theory and general principles are discussed and illustrated by practical examples from application areas in science, engineering, and medicine. Data Visualization will include some new sessions this year, which could be of special interest. Besides one talk that covers
augmented/virtual reality equipment, there will also be one around stereo perception and stereo content production.

Link: http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=28164

- **3D Computer Graphics and Animation**

In this course, you will get a good idea of Computer Graphics in general. The topic is of very high relevance for the industry and the research community and has numerous applications in different domains, such as scientific visualization, video games, simulators, special effects, animated movies and many more.

The course explains how to make things look real on a computer (reflections, reaction to light, etc.), which is of high importance, when inserting virtual models into a real scene.

Link: http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=28334

- **Computer Vision**

The central theme of the computer vision course is the automatic analysis and interpretation of images and videos using computer algorithms. The course explores a range of techniques for image segmentation, object detection, object tracking, object recognition, image alignment, and scene understanding.

Link: http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=28342

- **Seminar Computer Graphics**

In this seminar, recent topics and results in Computer Graphics are discussed. The study goal is to obtain in-depth knowledge about an advanced topic within Computer Graphics, in particular in rendering, game technology, visualization or geometric modelling. During the seminar, the students work on individual student research projects, mostly leading to a literature survey on a relevant topic and a presentation of the findings.

Link: http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=28335

- **Building Serious Games**

The main goal of the project is to take students with varying talents, backgrounds, and perspectives and put them together to do what none of them could do alone: to design and implement a serious game aimed at being applied in a real-world setting (educational, social, training, etc.). The emphasis is both on constructively fulfilling the game requirements, and on deploying the adequate technology for that purpose.

Link: http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=27569

- **Designing Multi-actor Systems**

In this course, students learn about designing complex, technological, large scale systems in multi-actor environments (in short, multi-actor systems). Different perspectives on systems design are discussed to provide students with a background for working with designers from different disciplines. AR systems could be subject to study with regard to their effect when being introduced as new socio-technical system, but they are not subject to be designed.

Link: http://www.studiegids.tudelft.nl/a101_displayCourse.do?course_id=27716
Leiden University

- **Perceptualization**

The term “perceptualization” was coined specifically for this course. It describes the translation of signals and information to modalities that appeal to any of the human senses. As such, it generalizes the terms “visualization” and “sonification” to include all other senses. In the course, we study such perceptualizations, with particular focus on how properties of a perception system can be used to optimally convey information.

Link: [http://mediatechnology.leiden.edu/openaccess/course-perceptualization](http://mediatechnology.leiden.edu/openaccess/course-perceptualization)

- **Human Computer Interaction**

This course covers theory and underlying mechanisms of human-computer interface design and implementation. The theoretical part deals with topics such as human perception, cognitive processes, limitations of human memory, metaphors, icons, widgets and user-centered design. During lab-time the underlying implementation of interfaces is discussed.

The course is very much hands-on oriented; the results of the lab assignments play an important role in the determination of a students’ final result. As a part of the practical project it is possible to realize mixed and augmented reality projects.

Link: [http://mediatechnology.leiden.edu/programme/curriculum/human-computer-interaction](http://mediatechnology.leiden.edu/programme/curriculum/human-computer-interaction)

- **New Media & New Technologies**

This course covers a range of the latest new media technologies and concepts, organized by more timeless themes such as new media history, social relationships, space and intelligent perception and action, so that these technologies can be placed into perspective. The course is a mix of lectures and practical assignments, and students are asked to create a product that incorporates a new technology or concept and motivate why it is not just a gimmick or hype.


- **Sound, Space & Interaction**

This course will focus on many topics in parallel: basics about sound and timbre, basics about acoustics, communication models incorporating space (and distance) and interaction models based on sound. Students will be able to make an interactive, network based, application that communicates with the audience/participant(s)/user(s) solely by means of sound.

Link: [http://mediatechnology.leiden.edu/programme/curriculum/sound-space-interaction](http://mediatechnology.leiden.edu/programme/curriculum/sound-space-interaction)