

Image Sensor and Camera Technology 23-24-25-26 April 2018 in Miami

An Image Sensor and Camera Technology course is schedule end of April 2018 in Miami, Florida.

The first day is dedicated to the big picture for less technical attendees like sales, marketing, support personnel and non-technical managers or for beginners.

The next three days are advanced and split over several courses, it is possible to subscribe for a single course, multiple courses or the full session. These detailed courses are introductory to mid-level, with some advanced topics, and are designed for engineers who are new to the field of imaging or non-engineering personnel who needs a more in-depth understanding of the technology or engineers familiar with some elements of machine vision but not the whole picture. It is also a good refresher course for experienced engineers. Each course is accompanied by a question and answer session and an open discussion session. Some courses include exercises.

There are PDF notes for each course available on a pen drive.

The courses in Miami are organized at a downtown venue between Monday April 23rd and Thursday April 26th.

The course sessions or a customized course session can be organized in company for a special price and an unlimited number of attendees.

Lunch will be organized (additional fee by reservation only) and an evening dinner on Monday evening and Wednesday evening will be proposed (additional fee by reservation only).

Venue

The training is organized in downtown Miami. Details will follow.

Hotel rooms can be booked through Aphesa.



Course schedule

- Monday – beginner's level:
 - 9:00AM to 9:15AM: Course introduction and Aphesa presentation
 - 9:15AM to 12:30PM: Introduction to imaging (light, light sources, lenses, sensors, cameras, industrial cameras, performance measurement and reporting).
 - 1:30PM to 4:00PM: Introduction to image sensors (history, CCD, CMOS)
 - 4:00PM to 5:00PM: CMOS image sensor fabrication
- Tuesday – intermediate/advanced level:
 - 9:00AM to 9:15AM: Course introduction and Aphesa presentation
 - 9:15AM to 12:30PM and 1:30PM to 2:30PM: Introduction to imaging (light, light spectrum, light sources, scene, behavior of light, basic radiometry and photometry, lighting techniques, polarization, filters, lasers, optical basics, MTF, CCD and CMOS image sensors, camera basics, color issues, multispectral and hyperspectral imaging, camera interfaces, photography and imaging terms, lens standards, camera interface standards) – course code: IMAG, including a short break, course level introductory to mid-level.
 - 2:30PM to 5:00PM: Introduction to CMOS image sensors (photodiodes, pinning, SPAD, pixels, 3T, 4T and 5T pixel operation, rolling vs global shutter, arrays, image sensor design, readout circuits, ADC circuits, architectures, spatial and temporal noise sources and noise compensation, color filters, microlenses, FSI vs BSI, pixel design, dark current, lag, defect pixels, ageing, temperature effects, high temperature imaging, extreme speed imaging), including a short break – course code: CMOS, course level mid-level to advanced.
- Wednesday – intermediate/advanced level:
 - 8:30AM to 9:30AM: End of CMOS course.
 - 9:30AM to 10:15AM: Production of CMOS image sensors (design flow, image sensor production process, physics of the wafer processing, image sensor packaging, back-side illumination, wafer scale packaging, butting, stitching) – course code: PROD, course level introductory to mid-level
 - 10:15AM to 10:30AM: break
 - 10:30AM to 11:00AM: Introduction to high speed and real time imaging – course code: HSRT, course level introductory to mid-level.
 - 11:00AM to 12:30PM and 1:30PM to 2PM: Introduction to software based (multiple exposure) high dynamic range imaging, including algorithms and artifacts and introduction to specific CMOS image sensors for HDR imaging, including control methods, pixel designs and artifacts – course code: HDRI, mid-level to advanced.
 - 2:00PM to 3:00PM: Introduction to 3D imaging – course code: 3DIM, course level introductory to mid-level.
 - 3:00PM to 3:30PM and 3:45PM to 4:45PM: Introduction to the EMVA1288 standard – course code: EMVA, course level introductory to mid-level.
 - 4:45PM to 5:00PM: Introduction to infrared imaging – course code: IRIM, course level introductory.

- Thursday – intermediate/advanced level:
 - 8:30AM to 11:45AM: Introduction to image processing, including a short break – course code: PROC, course level mid-level.
 - 11:45PM to 12:15PM: Special considerations related to mobile imaging – course code: MOBI, course level introductory.
 - 12:15AM to 12:30PM: Brief introduction to human vision
 - 1:30PM to 3:00PM: Test to assess your knowledge level.
 - 3:00PM to 5:00PM: Private consulting sessions available

The attendees will receive a certificate of attendance and a certificate of test results on request.

Prices

Course code	Price, before December 20 th 2017	Price, after December 20 th 2017
IMAG	325 euro	350 euro
CMOS	325 euro	350 euro
PROD	50 euro	70 euro
HDRI	180 euro	200 euro
3DIM	75 euro	90 euro
EMVA	100 euro	130 euro
3DIM	45 euro	60 euro
MOBI	45 euro	60 euro
PROC	240 euro	290 euro

Price for the full three days session: 990 euro (ordered before December 20th 2017) or 1190 euro (ordered after December 20th 2017).

Price for the introductory course on Monday: 130 euro (ordered before December 20th 2017) or 200 euro (ordered after December 20th 2017).

Reductions are offered for attendance to multiple courses (-10% on the total price for three course or more) or multiple members of a company attending the same courses (-10% for the second member, -30% for any additional member), or previous attendees (-10%).

Cancellation policy: 50 euro (or 50% of course price if less than 50 euro) if more than four weeks before the courses, 50% if less than four weeks before the courses, 100% less than one week before the course or in case of no show.

Payment terms: 30 days net, invoiced at the time of booking, net 10 after December 20th.

The full course session of three days will not run or will be reorganized over only one or

two days if more than one third of the time does not have the required minimum number of attendees. The minimum number of attendees is 5 and the maximum is limited to 12. The one day introductory course will only run if it has at least 5 attendees and the main three days courses runs. In case of cancellation, attendees will be refunded for the course and there will be no refund of any travel costs.

Registration

Contact info@aphesa.com or one of our authorized distributors if you intend to attend one or more training sessions, mentioning the course code and the number of attendees from the same company. Aphesa will then provide a quotation for the desired training package. The final decision to organize or cancel courses will be made on August 20th. Contacting us for a quotation or for more information does not engage yourself to buy a course.

About Aphesa

Founded in 2008, Aphesa provides consulting and development services in the field of imaging. Our company has designed multiple customer specific cameras for use in industrial, medical and oil&gas applications and has provided consulting services for the design of many other image sensors, cameras and systems. Our experience includes GigE-Vision, USB, USB3-Vision, CameraLink cameras and line scan or area scan sensors in color or monochrome. Our experience also includes high temperature designs, multispectral imaging, high dynamic range imaging, high-speed imaging, embedded image processing and many other topics. Aphesa is also specialized in image sensor and camera testing and has developed EMVA1288 compliant test equipments as well as other specific test equipments for laboratory or production use; the EMVA1288 measurements are also offered as a service.

More information about Aphesa: <http://www.aphesa.com>

Courses website: <http://imaging.courses>

Contact us: info@aphesa.com

APHESA SPRL
Rue de Lorcé, 39
B-4920 HARZÉ
BELGIUM

Visit our website for distributor's contact information.

