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COURSE: Electronic systems for biometric applications

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TEACHER: IULA ANTONIO

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website:

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Language IT

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ECTS: 9

n. of hours:25

Academic year: 2015/2016

Campus: Potenza

Semester: annual

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#### TOPICS

The aim of the course is to introduce general concepts of Biometrics and to describe some biometric systems based on Ultrasound.

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#### TEACHING METHODS (please tick one or more options)

- Theoretical lessons
- Tutorials in classroom
- Tutorials in laboratory
- Project works
- Technical visits

Other activities (please specify) \_\_\_\_\_

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#### TEXTBOOKS

Wayman, J.L.; Jain, A.K.; Maltoni, D.; Maio, Biometric Systems: Technology, Design and Performance Evaluation, Springer, 2005.

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#### ON-LINE EDUCATIONAL MATERIAL

web address: \_\_\_\_\_

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#### LEARNING OUTCOMES

Both methodological and practical approaches are followed. The methodological part is dedicated to the study of the working principle of the devices through simplified analytical models. Knowledge acquired will be applied through numerical exercises with the use of commercial software (ANSYS, MATLAB) to allow students design and simulation of devices and systems.

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#### REQUIREMENTS

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#### EVALUATION METHODS (please tick one or more options)

- Intermediate verifications
- Written examination
- Discussion of a project work
- Practical test
- Oral examination

Other methods (please specify) \_\_\_\_\_

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#### DETAILED CONTENT

Introduction to biometric systems. Goals of biometric systems, to prove own identity, people identification, Main biometric characteristics. Advantages of the biometric recognition. Field of application. Recognition modality; verification and authentication modes. Classification of biometric applications. Architecture and Performance of a biometric system. Template and matching. Errors in biometric systems. Evaluation parameters of a biometric system. Example of biometric characteristics: fingerprint, palmprint, vein pattern, hand geometry. Example of a biometric ultrasound system.

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#### EXAMINATION SESSIONS (FORECAST)

13/7/2016, 27/7/2016, 14/9/2016, 28/9/2016, 8/2/2017, 22/2/2017

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SEMINARS BY EXTERNAL EXPERTS    YES     NO

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FURTHER INFORMATION

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