LOGO DELLA STRUTTURA PRIMARIA

COURSE: ELECTRONICS			
ACADEMIC YEAR:2019/20			
TYPE OF EDUCATIONAL ACTIVITY: Affine			
TEACHER: IULA ANTONIO			
e-mail: antonio.iula@unibas.it		website:	
phone: 0971205151		mobile (optional):	
Language: ITALIAN			
ECTS: 9	n. of hours:78	Campus: Potenza SI-DiMIIE Program: Corso di Laurea in Sceinze e Tecnologie Informatiche	Semester:A

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

Knowlegde. The student has to know and understand the working principle of electronic devices and circuits studied during the course.

Applying knowledge. The student has to be able to apply acquired knowledge through practical exercises.

Criticism. The student has to be able to evaluate by himself methods or techniques to solve specific problems.

Communication Skills. The student has to show his communicative skills through written and oral examinations.

Learning capability. The student has to be able to examine in depth by himself issues studied during the course through the consultation of textbooks and on-line educational material.

PRE-REQUIREMENTS

Basic courses of Mathematics e Physics, Computer Architectures, Linear circuits, Signals and Systems.

SYLLABUS

Analog Electronics (51 h): Ideal Operational Amplifier and main circuits with OP AMPs. The Diode. Characteristic of the diode. Zener diode. Simplified models of the diode. Basic circuits with diodes. Transistor: BJT and MOSFET: input output characteristic, the transistor as amplifier and as logical switch. Polarization networks. Linear models for small signals. Coupled stages, examples. Sampling and quantization. A/D and D/A converters.

Digital Electronics (27 h): Electrical characteristics of logical gates. The real inverter. Logic levels. Noise Margins. Propagation time. Power consumption. NMOS and CMOS technologies. Transfer characteristics and logic levels. Elementary logic gates. Examples of combinatory and sequential circuits. Memorie: classification.

TEACHING METHODS

Theoretical lessons (63 h), Classroom tutorials (15 h).

EVALUATION METHODS

Intermediate verifications, Written examination, Oral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Sedra/Smith, *Circuiti per la microelettronica*, Edises.

Paolo Spirito, *Elettronica Digitale*, McGraw-Hill.

Millman/Grabel/Terrani, Elettronica di Millman, McGraw-Hill

INTERACTION WITH STUDENTS

Direct (2 hours a week) Wednesday 12, 00-14, 00, by email (at any time), before and after lessons. Mailing or whatsapp list.

EXAMINATION SESSIONS (FORECAST)[1]

24/06/2020; 22/07/2020; 23/09/2020; 28/10/2020; 16/12/2020; 17/02/2021; 12/05/2021

SEMINARS BY EXTERNAL EXPERTS YES □ NO x

FURTHER INFORMATION

[1] Subject to possible changes: check the web site of the Teacher or the Department/School for updates.