



FORM Nº 19 – **COURSE SYLLABUS/ACTIVITY**

CONTENT OF STUDIES

LOGIC CIRCUITS

<p><b>SUBJECT NAME/ACTIVITY</b> Industrial Electronics IV</p>	<p><b>CODE</b> TEE03075</p>	<p>CONCEPTION ( ) ALTERATION: NAME ( ) CL ( ) TRANSLATION: (X)</p>
---	---------------------------------	--

DEPARTMENT/IMPLEMENTATION COORDINATION: ELECTRICAL ENGINEERING DEPARTMENT

COURSE LOAD: 60 HOURS      THEORETICAL: 30 HOURS      PRACTICAL: 30 HOURS      INTERNSHIP: 0 HOURS

PROGRAM CONTENT

BOOLEAN ALGEBRA, COMBINATIONAL AND SEQUENTIAL LOGICAL CIRCUITS; NUMERICAL SYSTEMS; NOTIONS OF MICROPROCESSORS (HARDWARE AND SOFTWARE). OPERATIONAL AMPLIFIERS. PHOTSENSITIVE ELEMENTS AND PROTECTION AND CONTROL CIRCUITS.

- 1<sup>ST</sup> EXPERIMENT – FAMILIARIZATION WITH LABORATORY EQUIPMENT;
- 2<sup>ND</sup> EXPERIMENT – EXPERIENCES WITH LOGIC PORTS NAND AND NOR;
- 3<sup>RD</sup> EXPERIMENT – VERIFICATION OF BOOLE ALGEBRA AND KARNAUGH’S DIAGRAMS FOR LOGICAL CIRCUITS SIMPLIFICATIONS;
- 4<sup>TH</sup> EXPERIMENT – ARITHMETIC CIRCUITS – ADDER AND SUBTRACTOR;
- 5<sup>TH</sup> EXPERIMENT – STABLE CIRCUITS AND MONOSTABLE WITH CI 555;
- 6<sup>TH</sup> EXPERIMENT – FLIP FLOP RS, JK AND D;
- 7<sup>TH</sup> EXPERIMENT – COUNTERS;
- 8<sup>TH</sup> EXPERIMENT – MULTIPLEXER DESIGN;
- 9<sup>TH</sup> EXPERIMENT – DECODER EXPERIMENTS;
- 10<sup>TH</sup> EXPERIMENT – ANALOGIC-DIGITAL CONVERTER;
- 11<sup>TH</sup> EXPERIMENT – DIGITAL-ANALOGIC CONVERTER;
- 12<sup>TH</sup> EXPERIMENT – DISPLAY ACTIVATION AND COUNTERS OPERATION;
- 13<sup>TH</sup> EXPERIMENT – FREQUENCY METER WITH FLIP-FLOP D AND 74LS161;
- 14<sup>TH</sup> EXPERIMENT – MICROPROCESSORS PROGRAMMING.

BASIC BIBLIOGRAPHY:

1. R. J. TOCCI, N. S. WIDMER, E G. L. MOSS, “SISTEMAS DIGITAIS: PRINCÍPIOS E APLICAÇÕES”, PEARSON EDUCATION DO BRASIL LTDA, SÃO PAULO, SP, 11ª EDIÇÃO, 2011;
2. T. FLOYD, SISTEMAS DIGITAIS: FUNDAMENTOS E APLICAÇÕES, ED. BOOKMAN, 9ª EDIÇÃO, 2007;
3. J. P. UYEMURA, SISTEMAS DIGITAIS: UMA ABORDAGEM INTEGRADA. SÃO PAULO: THOMSON PIONEIRA, 2002;
4. N. A. MARTINS, SISTEMAS MICROCONTROLADOS, ED. NOVATEC, 2005;
5. W. S. ZANCO, “MICROCONTROLADORES PIC – TÉCNICAS DE SOFTWARE E HARDWARE PARA CIRCUITOS ELETRONICOS”, ED. ÉRICA. 2008.

COMPLEMENTARY BIBLIOGRAPHY:

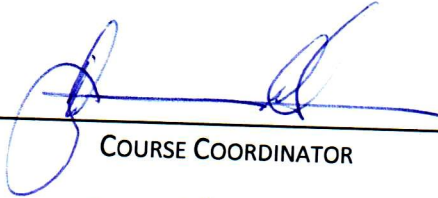
1. A. CAPELLI, “ELETRÔNICA PARA AUTOMAÇÃO”, ANTENNA EDIÇÕES TÉCNICAS, 1ª. EDIÇÃO, 2007;
2. R. L. BOYLESTAD, L. NASHELSKY, “DISPOSITIVOS ELETRÔNICOS E TEORIA DE CIRCUITOS”, 8ª EDIÇÃO, 2004;
3. F. CAPUANO, V. IDOETA, “ELEMENTOS DE ELETRONICA DIGITAL”, - ED. ÉRICA, 2001;



UNIVERSIDADE FEDERAL FLUMINENSE  
PRÓ-REITORIA DE GRADUAÇÃO  
COORDENADORIA DE APOIO AO ENSINO DE GRADUAÇÃO



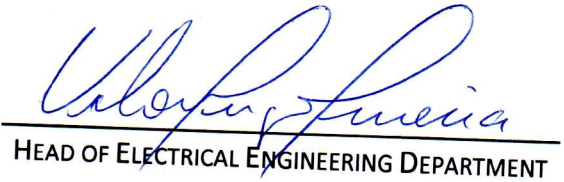
4. H. TAUB, CIRCUITOS DIGITAIS E MICROPROCESSADORES, MCGRAW-HILL, 1984;
5. J.W. BIGNELL E R. DONOVAN, "ELETRONICA DIGITAL", ED. CENGAGE, BRASIL, 2010;
6. <http://www.arduino.cc>;
7. A.S.SEDRA, "MICROELETRONICA", 5ª EDIÇÃO, ED. PEARSON.
8. D.E. LALOND, J.A. ROSS, PRINCÍPIOS DE DISPOSITIVOS E CIRCUITOS ELETRÔNICOS, VOLUMES 1 E 2, MAKRON BOOKS, 1999.

  
\_\_\_\_\_  
COURSE COORDINATOR

DATE 24 / 01 / 2018

*Daniel Henrique N. Dias*  
Coordenador do Curso de  
Graduação em Eng<sup>a</sup> Elétrica  
Matr. SIAPE 1847851

November/2017

  
\_\_\_\_\_  
HEAD OF ELECTRICAL ENGINEERING DEPARTMENT

DATE 23 / 01 / 2018

*Prof. Vitor Hugo Ferreira, D.Sc.*  
Chefe do Depto. Eng. Elétrica-UFF  
Matr. SIAPE 1672218