



**CURRICULAR STRUCTURE**

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

**CONTENT OF STUDIES**

**ELECTRICAL ENERGY SYSTEMS**

<b>SUBJECT NAME/ACTIVITY</b>	<b>CODE</b>	<b>CONCEPTION ( )</b>
Electrical Power Systems Dynamics and Control	TEE00137	ALTERATION: NAME ( ) CL ( ) TRANSLATION: (X)

DEPARTMENT/IMPLEMENTATION COORDINATION: ELECTRICAL ENGINEERING DEPARTMENT

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

**PROGRAM CONTENT**

LIMITS OF A SYNCHRONOUS GENERATOR. VOLTAGE CONTROL: AUTOMATIC VOLTAGE REGULATOR; EXCITER SYSTEM; POWER TRANSFORMERS WITH AUTOMATIC TAP COMMUTATION. SYNCHRONOUS AND STATIC COMPENSATORS. STABILIZERS. FREQUENCY CONTROL: SPEED REGULATORS: HYDRAULIC, VAPOR AND NATURAL GAS TURBINES. AUTOMATIC CONTROL OF GENERATION. OSCILLATION DYNAMICS. STABILITY. EQUAL AREAS CRITERIA.

**BASIC BIBLIOGRAPHY:**

1. PRABHA KUNDUR, "POWER SYSTEM STABILITY AND CONTROL", MCGRAW-HILL – EPRI, 1994;
2. FRANCISCO PAULO DE MELLO, "DINÂMICA DAS MÁQUINAS ELÉTRICAS II", SÉRIE PTI UNIVERSIDADE FEDERAL DE SANTA MARIA EM CONVÊNIO COM ELETROBRÁS, 1979;
3. WILLIAM D. STEVENSON JR., "ELEMENTOS DE ANÁLISE DE SISTEMAS DE POTÊNCIA", 2ª EDIÇÃO, MCGRAW-HILL, 1986;
4. OLLE I. ELGERD, "INTRODUÇÃO À TEORIA DE SISTEMAS DE ENERGIA ELÉTRICA", MCGRAW-HILL, 1978;
5. GLENN W. STAGG, AHMED H. EL-ABIAD, "COMPUTER METHODS IN POWER SYSTEM ANALYSIS", MCGRAW-HILL, 1968;
6. C. H. C. GUIMARÃES, "SISTEMAS ELÉTRICOS DE POTÊNCIA E SEUS PRINCIPAIS COMPONENTES", EDITORA CIÊNCIA MODERNA, 2014.

**COMPLEMENTARY BIBLIOGRAPHY:**

1. KATSUHIKO OGATA, "ENGENHARIA DE CONTROLE MODERNO", 7ª EDIÇÃO, PEARSON, 2010;
2. BENJAMIN C. KUO, "AUTOMATIC CONTROL SYSTEMS", 7TH EDITION, PRENTICE-HALL, 1995;
3. CARSON W. TAYLOR, "POWER SYSTEM VOLTAGE STABILITY", MCGRAW-HILL, 1994.

COURSE COORDINATOR

DATE 24 / 09 / 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 / 09 / 2018

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