



MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE OURO PRETO
PRÓ-REITORIA DE GRADUAÇÃO



COURSE OF CONTROL AND AUTOMATION ENGINEERING - 2020/1 (curriculum 2)
OURO PRETO'S CAMPUS

CODE	MANDATORY DISCIPLINES	PREREQUISITE	SWL	CWL	CLASSES		SEM
					T	P	
BCC701	COMPUTER PROGRAMMING I		60	72	2	2	1
CSO111	RESEARCH METHODOLOGY		30	36	1	1	1
MTM122	DIFFERENTIAL AND INTEGRAL CALCULUS I		90	108	6	0	1
MTM730	ANALYTIC GEOMETRY AND LINEAR ALGEBRA		60	72	4	0	1
QUI701	FUNDAMENTAL CHEMISTRY		60	72	2	2	1
ARQ205	GRAPHIC REPRESENTATION		60	72	2	2	2
BCC702	COMPUTER PROGRAMMING II	BCC701	60	72	2	2	2
EST202	STATISTICS AND PROBABILITY		60	72	4	0	2
FIS130	PHYSICS I	MTM122 MTM730	60	72	3	1	2
MTM123	DIFFERENTIAL AND INTEGRAL CALCULUS II	MTM122	60	72	4	0	2
BCC760	NUMERICAL CALCULUS		60	72	2	2	3
FIS131	PHYSICS II	FIS130 MTM123	60	72	3	1	3
FIS132	PHYSICS III	FIS130 MTM123	60	72	3	1	3
MTM124	DIFFERENTIAL AND INTEGRAL CALCULUS III	MTM123	60	72	4	0	3
MTM125	INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS	MTM123	60	72	4	0	3
BCC720	COMPUTER SYSTEMS APPLIED TO CONTROL AND AUTOMATION ENGINEERING	BCC702	60	72	4	0	4
CAT176	ELECTRIC CIRCUIT ANALYSIS		60	72	4	0	4
FIS133	PHYSICS IV	FIS132 MTM124	60	72	3	1	4
MEC161	TRANSPORT PHENOMENA FOR CONTROL AND AUTOMATION ENGINEERING	FIS131	60	72	4	0	4
MTM146	MATHEMATICS APPLIED TO AUTOMATION AND CONTROL ENGINEERING	MTM124 MTM125 MTM730	60	72	4	0	4
BCC721	DIGITAL CIRCUITS	BCC720	60	72	4	0	5
CAT141	CONTROL THEORY I		60	72	4	0	5
CAT164	ELECTROTECHNICAL FOR CONTROL AND AUTOMATION ENGINEERING		60	72	2	2	5
CAT165	ELECTRONIC DEVICES AND CIRCUITS		60	72	2	2	5
CIV107	STRENGTH OF MATERIALS AND STRUCTURES		60	72	2	2	5
BCC342	INTRODUCTION TO OPTIMIZATION	BCC702 BCC760	60	72	4	0	6
CAT163	INSTRUMENTATION		60	72	2	2	6
CAT169	ELECTRICAL DRIVE SYSTEMS		60	72	2	2	6
CAT183	CONTROL THEORY II		60	72	4	0	6
MET702	METALLURGY PROCESS ENGINEERING		60	72	4	0	6
BCC425	EMBEDDED SYSTEMS	BCC721	60	72	2	2	7
BCC740	ARTIFICIAL INTELLIGENCE	BCC702	60	72	4	0	7
CAT166	CONTROL THEORY III		60	72	4	0	7
CAT175	INDUSTRIAL COMPUTING		60	72	2	2	7
MIN107	MINING PROCESSES ENGINEERING		60	72	4	0	7
BCC722	REAL-TIME SYSTEM PROGRAMMING	BCC425	60	72	4	0	8
CAT167	INTEGRATED MANUFACTURING SYSTEMS		60	72	2	2	8
CAT181	INDUSTRIAL ROBOTICS		60	72	4	0	8
CAT490	FINAL UNDERGRADUATE WORK I		30	36	2	0	8
DIR250	INTRODUCTION AT LAW AND LEGISLATION		30	36	2	0	8
MEC142	FLUID MECHANICAL DRIVES		60	72	2	2	8
CAT168	SYSTEMS INTERFACING		60	72	4	0	9
CAT491	FINAL UNDERGRADUATE WORK II	CAT490	30	36	2	0	9
PRO243	ORGANIZATION AND ADMINISTRATION I		30	36	2	0	9
AMB111	BASIC ENVIRONMENT ENGINEERING M		30	36	2	0	10
PRO215	PLANNING AND PRODUCTION CONTROL I		60	72	4	0	10
PRO224	ENGINEERING ECONOMICS		60	72	4	0	10



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					T	P	
BCC426	FAULT TOLERANT SYSTEMS	BCC263	60	72	4	0	1500
BCC221	OBJECT ORIENTED PROGRAMMING	1500 hours BCC701	60	72	4	0	
BCC263	COMPUTER ARCHITECTURE	1500 hours BCC720	60	72	4	0	
BCC264	OPERATIONAL SYSTEMS	1500 hours BCC720	60	72	4	0	
BCC321	DATABASE I	1500 hours BCC702	60	72	4	0	
BCC326	IMAGE PROCESSING	1500 hours BCC702 MTM123	60	72	4	0	
BCC361	COMPUTER NETWORKS	1500 hours BCC720	60	72	4	0	
BCC362	DISTRIBUTED SYSTEMS	1500 hours BCC702 BCC720	60	72	4	0	
BCC448	PATTERN RECOGNITION	1500 hours BCC326	60	72	4	0	
BCC461	EVOLUTIONARY COMPUTATION	1500 hours BCC342	60	72	4	0	
BCC462	COMPUTATIONAL INTELLIGENCE	1500 hours BCC342	60	72	4	0	
BCC463	NETWORK OPTIMIZATION	1500 hours BCC342	60	72	4	0	
BCC464	LINEAR AND INTEGER OPTIMIZATION	1500 hours BCC342	60	72	4	0	
BCC465	MULTI-OBJECTIVE OPTIMIZATION TECHNIQUES	1500 hours BCC342	60	72	4	0	
BCC466	METAHEURISTICS IN COMBINATORIAL OPTIMIZATION	1500 hours BCC342	60	72	4	0	
BCC504	CONTROL AND AUTOMATION IN LOGISTICS OPERATIONS	1500 hours BCC701	60	72	4	0	
CAT105	ELECTRICAL INSTALLATIONS	1500 hours	30	36	2	0	
CAT132	MACHINES ELEMENTS	1500 hours	60	72	2	2	
CAT150	CONTROL AND AUTOMATION LABORATORY	1500 hours	60	72	0	4	
CAT156	STOCHASTIC AND OPTIMAL CONTROL	1500 hours	45	54	3	0	
CAT308	ARCHITECTURAL LIGHTING DESIGN	1500 hours	30	36	1	1	
CAT310	SPECIAL TOPICS IN INDUSTRIAL PROCESSES CONTROL	1500 hours	60	72	4	0	
CAT311	ADVANCED TOPICS IN INDUSTRIAL INFORMATICS	1500 hours CAT175	60	72	0	4	
CAT318	PRINCIPLES IN PNEUTRONICS AUTOMATION	1500 hours	60	72	4	0	
CAT327	INDUSTRIAL NETWORKS	1500 hours	60	72	3	1	
CAT328	ELECTRICAL MACHINES FOR CONTROL AND AUTOMATION ENGINEERING	1500 hours	60	72	4	0	
CAT329	CONTROL APPLIED TO THERMAL AND FLUID SYSTEMS	1500 hours	60	72	4	0	
CAT330	INDUSTRIAL ELECTRICAL INSTALLATIONS	1500 hours	60	72	4	0	
CAT331	BUILDINGS INSTALLATIONS	1500 hours	60	72	4	0	
CAT332	SPECIAL TOPICS IN PROCESS AUTOMATION	1500 hours	60	72	4	0	
CAT333	NUMERICAL CONTROL TECHNOLOGY	1500 hours	60	72	4	0	
CAT334	SPECIAL MEASUREMENT SYSTEMS	1500 hours	60	72	2	2	
CAT335	ELECTRICAL INSTALLATIONS	1500 hours	60	72	4	0	



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					T	P	
CAT336	NON-LINEAR CONTROL SYSTEMS	1500 hours	60	72	4	0	
CAT341	MICROCONTROLLERS APPLIED TO CONTROL AND AUTOMATION ENGINEERING	BCC425	60	72	2	2	
CAT342	SYSTEMS AND DISCRETE EVENTS		60	72	4	0	
CAT343	MOBILE ROBOTICS	1500 hours CAT181	60	72	4	0	
CAT601	AUTOMATION DESIGN	1500 hours	60	72	2	2	
CAT602	HISTORY OF ELECTRICITY AND AUTOMATIC CONTROL	CAT141 MTM146	30	36	2	0	
CAT603	PROBLEM-BASED LEARNING	2400 hours	30	36	2	0	
FIL131	ETHICS I	1500 hours	60	72	4	0	
LET303	ENGLISH - READING-I	1500 hours	60	72	4	0	
LET966	INTRODUCTION TO BRAZILIAN SIGN LANGUAGE (LIBRAS)		60	72	2	2	
MEC116	AN INTRODUCTION TO FIRE ENGINEERING	1800 hours	60	72	2	2	
MEC153	TERMODYNAMICAL SYSTEMS B	1500 hours	60	72	2	2	
MEC154	FLUID MECHANICS SYSTEM	1500 hours	60	72	2	2	
MEC155	THERMAL SYSTEMS B	1500 hours	60	72	2	2	
MEC338	INTRODUCTION TO INTELLIGENT MATERIALS	1500 hours	30	36	2	0	
MET143	NON-DESTRUTIVE TESTING	1500 hours	30	36	1	1	
MET144	MATERIALS SELECTION	1500 hours	30	36	2	0	
MET700	MATERIALS SCIENCE	1500 hours	60	72	3	1	
MIN235	OPERATIONAL RESEARCH APPLIED TO MINING	1500 hours	60	72	2	2	
MIN256	MINERAL PROCESSING I	1500 hours	60	72	2	2	
MIN257	MINERAL PROCESSING II	1500 hours	60	72	2	2	
MIN258	MINERAL PROCESSING III	1500 hours	60	72	2	2	
PRO562	ENERGY EFFICIENCY AND CONSERVATION		60	72	4	0	

CODE	ACTIVITIES	PREREQUISITE	CHARACTER	SWL	SEM
ATV400	TECNICAL LECTURE ON AUTOMATION AND CONTROL ENGINEERING		MANDATORY	15	1
ATV019	MONOGRAPH		MANDATORY	300	
ATV023	SUPERVISED INTERNSHIP		MANDATORY	160	
ATV100	ACADEMIC-SCIENTIFIC-CULTURAL ACTIVITY		MANDATORY	165	

Required Courses Load	Work Load
Mandatory Disciplines	2670
Elective Disciplines	300
Optative Disciplines	0
Facultative Disciplines	0
Activities	640
Total	3610