



## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## BS Computer Science and Engineering

## First Semester

## First Year (BS)

## Second Semester

Course Code	Course Title	Prerequisites	Cr	Course Code	Course Title	Prerequisites	Cr
*MATE 3031	Calculus I	MATE 3005 or MATE 3143 or MATE 3172 or MATE 3174	4	MATE 3032	Calculus II	MATE 3031 or MATE 3183 or MATE 3144	4
QUIM 3131	General Chemistry I	Co-req: QUIM 3133 and (MATE 3171 or MATE 3005 or MATE 3143 or MATE 3173)	3	QUIM 3132	General Chemistry II	QUIM 3131 and QUIM 3133 Co-Req: QUIM 3134	3
QUIM 3133	General Chemistry Lab I	Co-req: QUIM 3131 and (MATE 3171 or MATE 3005 or MATE 3143 or MATE 3173)	1	QUIM 3134	General Chemistry Lab II	QUIM 3001 or (QUIM 3131 and QUIM 3133) Co-req: QUIM 3132	1
**INGL 3---	English First Year		3	**INGL 3---	English First Year		3
CIIC 3015	Intro. to Computer Programming I		4	CIIC 3075	Foundations of Computing	CIIC 3015 or INGE 3016 <sup>1</sup> Co-req: MATE 3031	3
				CIIC 4010	Advanced Programming	CIIC 3015 or INGE 3016	4
			<b>Total Credits</b>	<b>15</b>			
					<b>Total Credits</b>		
							<b>18</b>

## First Semester

## Second Year (BS)

## Second Semester

Course Code	Course Title	Prerequisites	Cr	Course Code	Course Title	Prerequisites	Cr
MATE 3063	Calculus III	MATE 3032 or MATE 3184	3	CIIC 4025	Algorithm Design and Analysis	CIIC 4020 or ICOM 4035	3
FISI 3171	Physics I	MATE 3031 or MATE 3183 or MATE 3144	4	FISI 3172	Physics II	FISI 3161 or FISI 3171	4
FISI 3173	Physics Lab I	Co-req: FISI 3171	1	FISI 3174	Physics Lab II	FISI 3173 of FISI 3163 Co-req: FISI 3172	1
CIIC 4020	Data Structures	(CIIC 4010 or ICOM 4015) and (CIIC 3075 or ICOM 4075) Co-req: MATE 3031	4	INEL 3105	Electrical Systems Analysis I	MATE 3032 and INGE 3016 Co-req: FISI 3172 and MATE 3063	3
**ESPA 3101	Spanish I		3	**ESPA 3102	Spanish II	ESPA 3101	3
			<b>Total Credits</b>	<b>15</b>			
					<b>Total Credits</b>		
							<b>14</b>

## First Semester

## Third Year (BS)

## Second Semester

Course Code	Course Title	Prerequisites	Cr	Course Code	Course Title	Prerequisites	Cr
INSO 4101	Intro to Software Engineering	CIIC 4020 or ICOM 4035	3	INGE 3011	Engineering Graphics		2
CIIC 3081	Computer Architecture I	(CIIC 3015 or INGE 3016) Co-req: INEL 4115	3	CIIC 4082	Computer Architecture II	CIIC 3081	3
MATE 4145	Linear Algebra and Differential Equations	MATE 3063 and (COMP 3010 or INGE 3016)	4	INSO 5xxx CIIC 5xxx	Technical Elective***		3
INEL 4115	Electrical Measurements Lab	Co-req: INEL 3105	1	ININ 4010	Engineering Probability and Statistics	(INGE 3016 or CIIC 3015) and MATE 3032	3
**INGL 3---	English Second Year		3	**INGL 3---	English Second Year		3
			<b>Total Credits</b>	<b>14</b>			
					<b>Total Credits</b>		
							<b>14</b>

<sup>1</sup> The course CIIC 3015 substitutes INGE 3016 in the CIIC/INSO programs.



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

BS Computer Science and Engineering

**First Semester**

**Fourth Year (BS)**

**Second Semester**

Course Code	Course Title	Prerequisites	Cr		Course Code	Course Title	Prerequisites	Cr
CIIC 4050	Operating Systems	(ICOM 4035 or CIIC 4020) and (CIIC 4082 or INEL 4206)	4		CIIC 4060	Database Systems	(ICOM 4035 or CIIC 4020) Co-req: (ICOM 5007 or CIIC 4050)	3
CIIC 4030	Programming Languages	CIIC 4020 or ICOM 4035	3		CIIC 4070	Computer Networks	(ICOM 4035 or CIIC 4020) Co-re: (ICOM 5007 or CIIC 4050)	3
CIIC 5045	Automata and Formal Languages	CIIC 4020 or ICOM 4035	3		CIIC 5xxx INSO 5xxx	Technical Elective***		3
INGE 3045	Electrical Engineering Materials	(QUIM 3002 or QUIM 3132) and QUIM 3134 and FISI 3172	3		ININ 4015	Engineering Economics	MATE 3032	3
----	Socio-Humanistic Elective		3		----	Socio-Humanistic Elective		3
<b>Total Credits</b>			<b>16</b>		<b>Total Credits</b>			<b>15</b>

**First Semester**

**Fifth Year (BS)**

**Second Semester**

Course Code	Course Title	Prerequisites	Cr		Course Code	Course Title	Prerequisites	Cr
<b>CIIC 4151</b>	CSE Design Project	(CIIC 4025 and CIIC 4060 and INSO 4101) or DIR	3		INSO 5xxx CIIC 5xxx	Technical Elective***		3
INGE 3035	Engineering Mechanics	(MATE 3031 or MATE 3144 or MATE 3183) Co-req: FISI 3171 or FISI 3161	3		INME 4045	Thermodynamics	FISI 3172 and (QUIM 3002 or QUIM 3042 or (QUIM 3132 and QUIM 3134))	3
-----	Free Elective		3		-----	Free Elective		3
-----	Free Elective		3		-----	Free Elective		3
----	Socio-Humanistic Elective		3		----	Socio-Humanistic Elective		3
EDFI -----	Physical Education Elective		1		EDFI ----	Physical Education Elective		1
<b>Total Credits</b>			<b>16</b>		<b>Total Credits</b>			<b>16</b>

**TOTAL CREDITS: 153**

**\*\*\* Approved Technical Electives<sup>2</sup>**

INSO 4115 - Software requirements	CIIC 5018 - Cryptography and Network Security
INSO 4116 - Software Design	CIIC 5019 - High Performance Computing
INSO 4117 - Software Testing	CIIC 5029 - Compiler Development
CIIC 4995 - CSE COOP	CIIC 5110 - Bioinformatics Algorithms
INSO 4995 - SWE COOP	INSO 5111 - Introduction to Human-Computer Interaction
CIIC 4998 - Undergraduate Research in CSE	INSO 5118 - Software Project Management
INSO 4998 - Undergraduate Research in SWE	CIIC 5120 - Virtual Machines
CIIC 5015 - Artificial Intelligence	CIIC 5130 - Cloud Computing Infrastructure
CIIC 5017 - Operating Systems and Network Administration and Security	CIIC 5140 - Big Data Analytics
	CIIC 5995 - Selected Topics in CSE

<sup>2</sup> See CSE Student Manual for additional requirements on these technical elective courses.