

**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
		Total Credits	15				Total Credits	18

**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 or 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
		Total Credits	15				Total Credits	14

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

University of Puerto Rico Mayagüez

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BS Computer Science and Engineering

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
		Total Credits	14				Total Credits	14

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
		Total Credits	16				Total Credits	15



## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## BS Computer Science and Engineering

First Semester			Fifth Year (BS)			Second Semester		
Course Code	Course Title	Prerequisites	Cr		Course Code	Course Title	Prerequisites	Cr
CIIC 4151	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
		Total Credits	16				Total Credits	16

TOTAL CREDITS: 153 <sup>2</sup>

## \*\*\* Approved Technical Electives

INSO 4115 - Software requirements INSO 4116 - Software Design INSO 4117 - Software Testing CIIC 4995 - CSE COOP INSO 4995 - SWE COOP CIIC 4998 - Undergraduate Research in CSE INSO 4998 - Undergraduate Research in SWE CIIC 5015 - Artificial Intelligence CIIC 5017 - Operating Systems and Network Administration and Security	CIIC 5018 - Cryptography and Network Security CIIC 5019 - High Performance Computing CIIC 5029 - Compiler Development CIIC 5110 - Bioinformatics Algorithms INSO 5111 - Introduction to Human-Computer Interaction INSO 5118 - Software Project Management CIIC 5120 - Virtual Machines CIIC 5130 - Cloud Computing Infrastructure CIIC 5140 - Big Data Analytics CIIC 5995 - Selected Topics in CSE
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<sup>2</sup> See CSE Student Manual for additional requirements on these technical elective courses.