

Generic Study Plan for BSc. In Computer Engineering

Cohort fall 2024 and prior - Total = 144 credit hours

Year 1 - First Semester				Year 1 - Second Semester			
Course #.	Course Title	Pre-req.	Cr.	Course #.	Course Title	Pre-req.	Cr.
MATH105	Calculus I		3	MATH110	Calculus II	MATH105	3
PHYS105	General Physics I		3	CENG205	Digital Design & Computer Org.		3
CENG110	Artificial Intelligence Fundamentals and Applications		3	CENG202	Discrete Mathematics	MATH105	3
CSBP119	Algorithms and Problem Solving		3	CSBP219	Object-Oriented Programming	CSBP119	3
GEAE101	Academic English for Humanities and STEM		3	GEEM110	Contemporary Emirati Studies		3
CSBP121	Programming Lab I	CSBP119 (co)	1	CSBP221	Programming Lab II	,CSBP219 (co)	1
PHYS135	General Physics Lab I	Co PHYS105	1				
Semester Credit Hours			17	Semester Credit Hours			16
Year 2 - First Semester				Year 2 - Second Semester			
Course #.	Course Title	Pre-Req.	Cr.	Course #.	Course Title	Pre-Req.	Cr.
GESU121	Sustainability		3	MATH 275	Ordinary Differential Equation or Differential Equations for Eng.	MATH110 & MATH140	3
CENG201	Circuits Fundamentals	PHYS105	3	CENG221	Computer Architecture	CENG205	3
PHYS110	General Physics II	PHYS 105	3	PHYS231	Electronics Fundamentals	PHYS110 or PHYS1120	3
PHYS140	General Physics Lab II	PHYS135 & PHYS110 (Co)	1	CENG210	Communication & Networks Fundamentals	CENG205 (co/pre) &PHYS105	3
CENG231	Circuits Lab	Pre/Co CENG201	1	GEIS100	Islamic Culture		3
CSBP319	Data Structures	CSBP219	3	BIOC100/CHEM111	Basic Bio. I or General Chem. I		3
MATH140	Linear Algebra		3				
Semester Credit Hours			17	Semester Credit Hours			18
Year 3 - First Semester				Year 3 - Second Semester			
Course #.	Course Title	Pre-Req.	Cr.	Course #.	Course Title	Pre-Req.	Cr.
CENG340	Autonomous Sys. Fund&App	CENG328	3	CENG320	Signals & Systems I	MATH 275	3
CENG341	Autonomous Systems Lab	CENG328 & CENG340	1	CENG324	Digital System Design	CENG205	3
CENG328	Introduction to Embedded Systems	CENG 221	3	CENG325	Digital Design Lab	Pre/Co CENG324	1
CENG329	Introduction to Embedded Systems Lab	Pre/Co CENG328	1	CSBP315	Operating Systems Fundamentals	CENG205	3
ITBP301	Security Principles and Practice	CENG210	3	CENG xxx	Major Elective Lab **		1
STAT210	Probability and Statistics	MATH110	3	CENG xxx	Major Elective 2**		3
CENG xxx	Major Elective 1**		3	Elective	Cultural Elective 1		3
Semester Credit Hours			17	Semester Credit Hours			17
Year 4 - First Semester				Year 4 - Second Semester			
Course #.	Course Title	Pre-Req.	Cr.	Course #.	Course Title	Pre-Req.	Cr.
ITBP418	Entrepreneurship in IT	ITBP301	3	Elective	Cultural Elective 2		3
SWEB300	Software Engineering Fundamentals	CSBP219	3		Free Elective 1		3
ITBP480	Senior Graduation Project I*	STAT210	3		Free Elective 2		3
CENG xxx	Major Elective 3 **		3	ITBP481	Senior Graduation Project II	ITBP480	3
CENG xxx	Major Elective 4**		3	ITBP370	Professional Responsibility in IT	GEAE101	3
Semester Credit Hours			15	Semester Credit Hours			15
Year 5 - First Semester							
ITBP495: Internship (12 credit hours)							
(Students are not Allowed to register any additional courses during their internship without the approval of the College)							

*Students must have finished 94 Cr. Hr to register in ITBP480

Major electives Courses**	Pre-req.	Major electives Courses*	Pre-req.
CENG 513 Hardware Test & Fault Tolerance	CENG 324	CENG521 Hardware/Software Integration	CENG324, CENG 328, SEWB300
CENG529 Networking Lab	Co (CENG 210)	CENG533 Advanced Network Services	CENG 530
CENG518 VLSI Design	ELEC 370	CENG580 Selected. Topics in Comp Eng.	
CENG530 Computer Network Protocols	CENG 210	CENG532 Network Security or ISEC311	CENG 530, ITBP 301

Major electives Courses**	Pre-req.	Major electives Courses*	Pre-req.
CENG410 Distributed Systems, Microservices and Containers	CSBP219	CENG420 System Design, Analysis and Simulation	STAT210
CENG531 Wireless Comm & Sensor Net	CENG 210	CENG400 AI Data Engineering	STAT210,CSBP119
CENG430 Applied AI for Computer Engineering	MATH140, STAT210, CSBP119	CENG440 Machine Learning for Embedded Systems	CENG328

Culture Elective Courses	
Choose one course ONLY from each group	
Cultural Elective 1 Social and Behavioral Sciences (3 Cr. Hrs.)	
AGRB 210	Introduction to Agribusiness
ECON 110	Principles of Economics
HSR 140	Introduction to Society and Behavior
HSR 150	Introduction to Government, Policy, and Urban Studies
PSY 100 / PYSC 100	Introduction to Psychology
GEO 200	World Regional Geography
GHEP111	Happiness and Wellbeing
CURR103	Early childhood Dev & Learning
CHIN 102	Chinese 2 for beginners
FCH 102	French 2 for beginners
KOR 102	Korean 2 for beginners
GER 102	German 2 for beginners
SPN 102	Spanish 2 for beginners
Cultural Elective 2 Humanities/Fine Art (3 Cr. Hrs.)	
ARCH 366	History and Theory of Architecture
HSR 120	Introduction to Heritage and Culture
HSR 130	Introduction to Language and Communication
PHI101	Introduction to Philosophy
HIS 130	Sheikh Zayed; History, Found. & Dev.
CHIN 101	Chinese 1 for beginners
FCH101	French 1 for beginners
KOR 101	Korean 1 for beginners
GER 101	German 1 for beginners
SPN 101	Spanish 1 for beginners