Mirpur University of Science & Technology

Scheme of Studies Bachelor of Science in Computer Science (BSCS) of Session 2023-27

Duration:	4-7 years
Semesters:	8-14 semesters
No. of weeks per semester:	18 (16 for teaching and 2 for examination)
Total no. of credit hours (CH):	137
No. of credit hours per semester	15-19

*3 credit hour internship course is offered in any summer semester (6-8weeks) after 4th semester, with the compulsion that student should not be enrolled in any other course. Internship will be registered and graded in 8th semester.

Semester Wise Breakdown

#	Code	Pre-Req	Course Title	Cr hr
Semester 1				
1	ICT-1126		Application of Information & Communication Technologies	2(2-0)
2	ICT-1126 L		Application of Information & Communication Technologies Lab	1(0-3)
3	BCS-1101		Programming Fundamentals	3(3-0)
4	BCS-1101 L		Programming Fundamentals Lab	1(0-3)
5	MAT-1115		Discrete Structures	3(3-0)
6	ICP-1127		Ideology and Constitution of Pakistan	2 (2-0)
7	ENG-1107		Functional English	3(3-0)
8	MAT-1115NC		*Pre Algebra (Non-Credit)	3(3-0)
9	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
10	SFS-1101		Skill for Success	0(0-0)
				15 (13-6)
For those students who have not studied mathematics in intermediate				
Semester 2				
1	BCS-1202	BCS-1101	Object Oriented Programming	3(3-0)
2	BCS-1202 L	BCS-1101 L	Object Oriented Programming Lab	1(0-3)
3	BCS-1203		Database Systems	3(3-0)
4	BCS-1203 L		Database Systems Lab	1(0-3)
5	ENG-1207	ENG-1107	Expository Writing	3(3-0)
6	MAT-1215		Linear Algebra	3(3-0)
7	PHY-1218		Applied Physics	2(2-0)
8	PHY-1218 L		Applied Physics Lab	1(0-3)
9	MAT-1215NC		*Pre-Calculus (Non-Credit)	3(3-0)

10	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
				17 (14-9)

*For those students who have not studied mathematics in intermediate

			Semester 3	
1	BCS-2304	BCS-1202	Data Structures	3(3-0)
2	BCS-2304 L	BCS-1202 L	Data Structures Lab	1(0-3)
3	BCS-2305		Operating Systems	2(2-0)
4	BCS-2305 L		Operating Systems Lab	1(0-3)
5	BCS-2306		Digital Logic Design	2(2-0)
6	BCS-2306 L		Digital Logic Design Lab	1(0-3)
7	MAT-2315		Calculus & Analytical Geometry	3(3-0)
8	STA-2320		Probability & Statistics	3(3-0)
9	ARA-2301		Arabic	3(3-0)
10	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
				19 (16-9)

			Semester 4	
1	BCS-2407		Computer Organization & Assembly Language	2(2-0)
2	BCS-2407 L		Computer Organization & Assembly Language Lab	1(0-3)
3	BCS-24xx		Domain Elective 1	2(2-0)
4	BCS-24xx L		Domain Elective 1 Lab	1(0-3)
5	BCS-2408		Software Engineering	3(3-0)
6	BCS-2409		Artificial Intelligence	2(2-0)
7	BCS-2409 L		Artificial Intelligence Lab	1(0-3)
8	MAT-2415		Multivariable Calculus	3(3-0)
9	SOC-2421		Civic and Community Engagement	2(2-0)
10	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
				17 (14-9)

*Student is eligible to apply for internship in any summer after 4th semester.

			Semester 5	
1	BCS-3510		Information Security	2(2-0)
2	BCS-3510 L		Information Security Lab	1(0-3)
3	BCS-3511		Analysis of Algorithm	3(3-0)
3	BCS-3512		Computer Networks	2(2-0)
5	BCS-3512 L		Computer Networks Lab	1(0-3)
6	BCS-35xx		Domain Elective 2	2(2-0)
7	BCS-35xx L		Domain Elective 2 Lab	1(0-3)
8	BCS-3517		Theory of Automata	3(3-0)
9	BCS-35xx		Domain Elective 3	2(2-0)
10	BCS-35xx L		Domain Elective 3 Lab	1(0-3)
11	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
				18 (14-12)

			Semester 6	
1	BCS-3618		Compiler Construction	2(2-0)
2	BCS-3618 L		Compiler Construction Lab	1(0-3)
3	BCS-3615	BCS-1203	Advance Database Management System	2(2-0)

4	BCS-3615 L	BCS-1203 L	Advance Database Management System Lab	1(0-3)
4	BCS-36xx		Domain Elective 4	2(2-0)
5	BCS-36xx L		Domain Elective 4 Lab	1(0-3)
6	BCS-36xx		Domain Elective 5	2(2-0)
7	BCS-36xx L		Domain Elective 5 Lab	1(0-3)
8	ECO-3606		Economics	2(2-0)
9	ENG-3607		Technical and Business Writing	3(3-0)
10	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
				17(13-12)
			Semester 7	
1	BCS-4716		Computer Architecture	2(2-0)
2	BCS-4716 L		Computer Architecture Lab	1(0-3)
3	BCS-4713		Final Year Project - I	2(0-6)
4	BCS-47xx		Domain Elective 6	2(2-0)
5	BCS-47xx L		Domain Elective 6 Lab	1(0-3)
6	BCS-47xx		Domain Elective 7	2(2-0)
7	BCS-47xx L		Domain Elective 7 Lab	1(0-3)
8	ETR-4708		Entrepreneurship	2(2-0)
9	MBS-4709		Introduction to Marketing	3(3-0)
10	ISL-4712		Islamic Studies	2(2-0)
11	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	0(0-0)
				18 (13-15)
* Final Year Project term is used instead of Capstone Project.				
			Semester 8	
1	BCS-4814	BCS-4713	Final Year Project - II	4(0-12)
2	HUM-4817		Professional Practices	2 (2-0)
3	BCS-4819		HCI and Computer Graphics	2(2-0)
4	BCS-4819 L		HCI and Computer Graphics Lab	1(0-3)
5	BCS-4820		Parallel Distributed Computing	2(2-0)
6	BCS-4820 L		Parallel Distributed Computing Lab	1(0-3)
7	BCS-4822		Internship	3(3-0)
8	HQT-1128		Holy Quran with Translation, Tajweed, and Tafseer.	1(1-0)
9				
				16 (10-18)
* For evaluation of Final Year Project-II, one credit hour will be marked by internal supervisor and three by external supervisor.				

Normal range for credit hours is 15-18 in each semester, and it may be up to maximum of 21 credit hours in a semester.

List of Elective Courses (21/137) 7 Courses

*Students can register elective courses across the computing discipline

#	Code	Pre-Req.	Course Title	Cr Hr
1	BCS-2422		Full Stack Web Development	2(2-0)
	BCS-2422 L		Full Stack Web Development Lab	1(0-3)

2	BCS-3523		Mobile Application Development 1	2(2-0)
	BCS-3523 L		Mobile Application Development 1 Lab	1(0-3)
3	BCS-4724	BCS-1202	Advanced Programming	2(2-0)
	BCS-4724 L	BCS-1202 L	Advanced Programming Lab	1(0-3)
4	BCS-4725	BCS-3510	Cyber Security	2(2-0)
	BCS-4725 L	BCS-3510 L	Cyber Security Lab	1(0-3)
5	BCS-3626		Mobile Application Development 2	2(2-0)
	BCS-3626 L		Mobile Application Development 2 Lab	1(0-3)
6	BCS-3627		Cloud Computing	2(2-0)
	BCS-3627 L		Cloud Computing Lab	1(0-3)
7	BCS-3528	BCS-1203	Distributed Database System	2(2-0)
	BCS-3528 L	BCS-1203 L	Distributed Database System Lab	1(0-3)
8	BCS-3529		Data Mining	2(2-0)
	BCS-3529 L		Data Mining Lab	1(0-3)
9	BCS-3630		Big Data Analytics	2(2-0)
10	BCS-3630 L		Big Data Analytics Lab	1(0-3)
	BCS-4731		Network Security	2(2-0)
	BCS-4731 L		Network Security Lab	1(0-3)
11	BCS-3632		Deep Learning	2(2-0)
	BCS-3632 L		Deep Learning Lab	1(0-3)
12	BCS-2433		Applications in block chain	2(2-0)
	BCS-2433 L		Applications in block chain Lab	1(0-3)
13	BCS-3534		Introduction to Python Programming	2(2-0)
	BCS-3534 L		Introduction to Python Programming Lab	1(0-3)
14	BCS-4735		Game Development	2(2-0)
	BCS-4735 L		Game Development Lab	1(0-3)
15	BCS-3636		Digital Image Processing	2(2-0)
	BCS-3636 L		Digital Image Processing Lab	1(0-3)
16	BCS-4737		Semantic Web	2(2-0)
17	BCS-4737 L		Semantic Web (L)	1(0-3)
	BCS-3638		Object Oriented Analysis & Design	2(2-0)
	BCS-3638 L		Object Oriented Analysis & Design Lab	1(0-3)
18	BCS-3539		Software Testing & Quality Assurance	2(2-0)
	BCS-3539 L		Software Testing & Quality Assurance Lab	1(0-3)

Scheme of Studies Bachelor of Science in Information Technology (BSIT) of Session 2023-27

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*3 credit hour internship course is offered in any summer semester (6-8weeks) after 4th semester, with the compulsion that student should not be enrolled in any other course. Internship will be registered and graded in 8th semester.

Semester Wise Breakdown

#	Code	Pre-Req	Course Title	Cr hr
			Semester 1	
1	ICT-1126		Application of Information & Communication Technologies	2(2-0)
2	ICT-1126 L		Application of Information & Communication Technologies Lab	1(0-3)
3	BIT-1101		Programming Fundamentals	3(3-0)
4	BIT-1101 L		Programming Fundamentals Lab	1(0-3)
5	MAT-1115		Discrete Structures	3(3-0)
6	ICP-1127		Ideology and Constitution of Pakistan	2 (2-0)
7	ENG-1107		Functional English	3 (3-0)
8	MAT-1115NC		*Pre-Algebra (Non-Credit)	3 (3-0)
9	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
10	SFS-1101		Skill for Success	0(0-0)
				15 (13-6)
*For those students who have not studied mathematics in intermediate				
			Semester 2	
1	BIT-1202	BIT-1101	Object Oriented Programming	3(3-0)
2	BIT-1202 L	BIT-1101 L	Object Oriented Programming Lab	1(0-3)
3	BIT-1203		Database Systems	3(3-0)
4	BIT-1203 L		Database Systems Lab	1(0-3)
5	ENG-1207	ENG-1107	Expository Writing	3(3-0)
6	MAT-1215		Linear Algebra	3(3-0)
7	PHY-1218		Applied Physics	2(2-0)
8	PHY-1218 L		Applied Physics Lab	1(0-3)
9	MAT-1215NC		*Pre-Calculus (Non-Credit)	3(3-0)
10	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
				17 (14-9)
*For those students who have not studied mathematics in intermediate				
			Semester 3	
1	BIT-2304	BIT-1202	Data Structures	3(3-0)
2	BIT-2304 L	BIT-1202 L	Data Structures Lab	1(0-3)
3	BIT-2305		Operating Systems	2(2-0)
4	BIT-2305 L		Operating Systems Lab	1(0-3)
5	BIT-2306		Digital Logic Design	2(2-0)
6	BIT-2306 L		Digital Logic Design Lab	1(0-3)
7	MAT-2315		Calculus & Analytical Geometry	3(3-0)
8	STA-2320		Probability & Statistics	3(3-0)
9	ARA-2301		Arabic	3(3-0)
10	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
				19 (16-9)
			Semester 4	

#	Code		Course	Credit
1	BIT-2407		Computer Organization & Assembly Language	2(2-0)
2	BIT-2407 L		Computer Organization & Assembly Language Lab	1(0-3)
3	BIT-24xx		Domain Elective 1	2(2-0)
4	BIT-24xx L		Domain Elective 1 Lab	1(0-3)
5	BIT-2408		Software Engineering	3(3-0)
6	BIT-2409		Artificial Intelligence	2(2-0)
7	BIT-2409 L		Artificial Intelligence Lab	1(0-3)
8	MAT-2415		Multivariable Calculus	3(3-0)
9	SOC-2421		Civic and Community Engagement	2(2-0)
10	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
				17 (14-9)

*Student is eligible to apply for internship in any summer after 4th semester.

			Semester 5	
1	BIT-3510		Information Security	2(2-0)
2	BIT-3510 L		Information Security Lab	1(0-3)
3	BIT-3511		Analysis of Algorithm	3(3-0)
4	BIT-3512		Computer Networks	2(2-0)
5	BIT-3512 L		Computer Networks Lab	1(0-3)
6	BIT-35xx		Domain Elective 2	2(2-0)
7	BIT-35xx L		Domain Elective 2 Lab	1(0-3)
8	BIT-3517		Web Technologies	2(2-0)
9	BIT-3517 L		Web Technologies Lab	1(0-3)
10	BIT-35xx		Domain Elective 3	2(2-0)
11	BIT-35xx L		Domain Elective 3 Lab	1(0-3)
12	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
				18 (13-15)

			Semester 6	
1	BIT-3618		Cyber Security	2(2-0)
2	BIT-3618 L		Cyber Security Lab	1(0-3)
3	BIT-3615		DB administration& Management	2(2-0)
4	BIT-3615 L		DB administration& Management Lab	1(0-3)
5	BIT-36xx		Domain Elective 4	2(2-0)
6	BIT-36xx L		Domain Elective 4 Lab	1(0-3)
7	BIT-36xx		Domain Elective 5	2(2-0)
8	BIT-36xx L		Domain Elective 5 Lab	1(0-3)
9	ECO-3606		Economics	2(2-0)
10	ENG-3607		Technical and Business Writing	3(3-0)
11	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
				17(13-12)

			Semester 7	
1	BIT-4716		Information Technology Infrastructure	2(2-0)
2	BIT-4716 L		Information Technology Infrastructure Lab	1(0-3)
3	BIT-4713	.	Final Year Project - I	2(0-6)
4	BIT-47xx		Domain Elective 6	2(2-0)
5	BIT-47xx L		Domain Elective 6 Lab	1(0-3)
6	BIT-47xx		Domain Elective 7	2(2-0)
7	BIT-47xx L		Domain Elective 7 Lab	1(0-3)

8	ETR-4708		Entrepreneurship	2(2-0)
9	MBS-4709		Introduction to Marketing	3(3-0)
10	ISL-4712		Islamic Studies	2(2-0)
11	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	0(0-0)
				18(13-15)

* Final Year Project term is used instead of Capstone Project.

			Semester 8	
1	BIT-4814	BIT-4713	Final Year Project - II	4(0-12)
2	HUM-4817		Professional Practices	2(2-0)
3	BIT-4819		System & Network Administration	2(2-0)
4	BIT-4819 L		System & Network Administration Lab	1(0-3)
5	BIT-4820		Parallel Distributed Computing	2(2-0)
6	BIT-4820 L		Parallel Distributed Computing Lab	1(0-3)
7	BIT-4822		Internship	3(3-0)
8	HQT-1128		Holy Quran with Translation, Tajweed and Tafseer	1(1-0)
				16 (10-18)

* For evaluation of Final Year Project-II, one credit hour will be marked by internal supervisor and three by external supervisor.

List of Elective Courses (21/137) 7 Courses

*Students can register elective courses across the computing discipline

#	Code	Pre-Req.	Course Title	Cr Hr
1	BIT-2422		Mobile Application Development 1	2(2-0)
	BIT-2422 L		Mobile Application Development 1 Lab	1(0-3)
2	BIT-4732	BIT-1202	Advanced Programming	2(2-0)
	BIT-4732 L	BIT-1202 L	Advanced Programming Lab	1(0-3)
3	BIT-2423		Applications in block chain	2(2-0)
	BIT-2423 L		Applications in block chain Lab	1(0-3)
4	BIT-3629		Mobile Application Development 2	2(2-0)
	BIT-3629 L		Mobile Application Development 2 Lab	1(0-3)
5	BIT-3630		Cloud Computing	2(2-0)
	BIT-3630 L		Cloud Computing Lab	1(0-3)
6	BIT-4733		Semantic Web	2(2-0)
	BIT-4733 L		Semantic Web (L)	1(0-3)
7	BIT-4734		Network Security	2(2-0)
	BIT-4734 L		Network Security Lab	1(0-3)
8	BIT-3525	BIT-1203	Distributed Database System	2(2-0)
	BIT-3525 L	BIT-1203 L	Distributed Database System Lab	1(0-3)
9	BIT-3526		Data Mining	2(2-0)
	BIT-3526 L		Data Mining Lab	1(0-3)
10	BIT-3631		Big Data Analytics	2(2-0)
	BIT-3631 L		Big Data Analytics Lab	1(0-3)
11	BIT-3528		Introduction to Python Programming	2(2-0)
	BIT-3528 L		Introduction to Python Programming Lab	1(0-3)
12	BIT-2424		Information System	2(2-0)

	BIT-2424 L		Information System Lab	1(0-3)
13	BIT-4735		Game Development	2(2-0)
	BIT-4735 L		Game Development Lab	1(0-3)
14	BIT-3627		Digital Image Processing	2(2-0)
	BIT-3627 L		Digital Image Processing Lab	1(0-3)
15	BIT-3636		Wireless Networks	2(2-0)
	BIT-3636 L		Wireless Networks lab	1(0-3)
16	BIT-4737		Object Oriented Analysis and Design	2(2-0)
	BIT-4737 L		Object Oriented Analysis and Design Lab	1(0-3)
17	BIT-4738		Software Testing & Quality Assurance	2(2-0)
	BIT-4738 L		Software Testing & Quality Assurance Lab	1(0-3)