GUIDELINES of B.Sc. (H) COMPUTER SCIENCE
COMPUTER SYSTEM ARCHITECTURE
(Under NEP Scheme 2022)
Semester I
Core Course – II

Semester	DSC No.	Title	L	T*	P*	Total credits	Pre-requisites
I	DSC-02	Computer System Architecture	3	0	1	4	None

S. No.	Unit Name	Chapter Number and Name	Section Numbers	Reference	No. of Lectures*	Week No.	Chapter wise Weightage* (Marks)
1	**Unit 1:** Digital Logic Circuits	Ch 1: Digital Logic Circuits	1.1, 1.2, 1.3, 1.4, 1.5, 1.6 1.7 (up to pg. 28)		6	1-2	14
2	**Unit 2:** Digital Components (Fundamental building blocks):	Ch 2: Digital Components	2.2, 2.3, 2.7		5	3-5	6
		Ch 4: Register Transfer and Micro-operations	4.4 (up to fig. 4.7)		4		5
3	**Unit 3:** Data Representation and Basic Computer Arithmetic	Ch 3: Data Representation	3.1, 3.2, 3.3	[1]	6	6-7	8
4	**Unit 4:** Basic Computer Organization and Design	Ch 5: Basic Computer Organization and Design	5.1, 5.2, 5.3, 5.4 (up to pg. 137), 5.5, 5.6, 5.7		10	8-11	15

		Ch 9: Pipeline and Vector Processing	9.2		2		4
5	**Unit 5:** Processors:	Ch 8: Central Processing Unit	8.1, 8.2, 8.3 (up to pg. 247), 8.5, 8.8 (only characteristics, i.e., pg. 282 – 284)		4	12-13	10
		Ch-7: Multicores, Multiprocessors, and Clusters	7.1 (page 632-Introduction of Multicore Processor) 7.7 (page 654-656) Characteristics of GPU Vs. CPU	[2]	1		3
6	**Unit 6:** Memory and Input-Output Organization	Ch 11: Input Output Organization	11.2 (up to pg-388), 11.4, 11.6 (up to pg-416)	[1]	6	14-15	8
		Ch 12: Memory Organization	12.1 (up to pg-446)		1		2

*The number of lectures and chapter wise weightage may be treated as indicative only.

References:

[1] Computer System Architecture: Morris M. Mano (Pearson Education, 3rd Edition)
[2] Patterson and John L. Hennessy. "Computer Organization and Design: The Hardware/Software interface", 5th edition, Elsevier, 2012.