

Bangladesh University of Business and Technology (BUBT)

COURSE OUTLINE

Program: B.Sc Engg. in CSE Course Code: CSE 313 Course Title: Mathematical Analysis for

Computer Science

Semester: Summer- 2020 Intake:38

Course Teacher: Adeeba Anis, Lecturer, Dept. of CSE, BUBT

Mon th	Week	Lect ur e	Topics	Chapte r	Remark s
Aug 06-12, 2020	1	1	Introduction, recurrence relation and solution and	Knuth Ch-	
			different notations, Iterative method	01	
	•	2	proof by mathematical induction, Recurrent	"	
			Problems-1: Tower of Hanoi, Recurrent		
			Problems-2: Lines in the plane		
Aug 13-19, 2020	2	3	Recurrent Problems-3: Josephus Problem, Sums-	Knuth Ch-	
			1: Notations	01,02	
		4	Sums-1: Sums to Recurrences, Sums-2:	Knuth Ch-	
			Recurrence to sum	02	
					Quiz-1
Aug 20-26, 2020	3	5	Sums-3: Manipulations sums, Sum-4: Multiple	"	
			sums		
		6	Sums-5: General Methods-1	"	
Aug 27- Sep 02, 2020	4	7	Sums-6: General Methods-2, Sums-7: General	"	
			Methods-3		
		8	Sums-8: General Methods-4	"	
					Quiz-2
Sep 03-09, 2020	5	9	Integer Functions-1: Floor, Ceiling,	Knuth Ch-	
				04	
		10	Integer Functions-2: Floor Ceiling Recurrence	,,	
Sep 10-16, 2020	6	11	Integer Functions-3: Mod: Binary Operation	"	
	-	12	Integer Functions-4: Floor Ceiling Sums	,,	
	-		miceger runetions in Front Centing Sums		Class Test
Sep 17-23, 2020	7	13	Integer Functions-4: Floor Ceiling Sums	,,	rest
r	-		(continued.)		
	-	14	Review class for Mid-Term Examination		
Sep 25-Oct 03			Mid-term Examination		
_		1.5			
Oct 07-13, 2020	8	15	Number Theory-1: Divisibility, Primes, Factorial		
	<u> </u>	-1/-	Factor, Number Theory-2: Relative Prime	05	
		16	Number Theory-3: Factorial factors, relative	"	
0 414 20 2020		1.,	primality		
Oct 14-20, 2020	9	17	Number Theory-3: Congruence Relations,	"	
			Application of Congruence Relations.		Onia 2
		10			Quiz-3
		18	Introduction to probability theory: sample space	Ross Ch-	
() 04 21 27 2020	1	10	and events, probability defined on events,	01	
Oct 21-27, 2020	$\stackrel{1}{0}$	19	Introduction to probability theory: conditional	"	
	,	20	probability, independent events		
		20	Introduction to probability theory: Bayes	Ross Ch-	

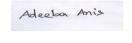
			formula, Introduction to random variables	01,02	
					Quiz-4
Oct 28-Nov 03, 2020	1	21	Discrete random variable	Ross	
	1			Ch-02	
		22	Continuous random variable	"	
					Class Test
Nov 04-13, 2020	$\frac{1}{2}$	23	Markov chain, stochastic process	Ross	
	2			Ch-04	
		24	Chapman-Kolmogorov equations	**	
Nov 15-23, 2020			Semester Final Examination		
Nov 30, 2020			Final Result Publication		
15t Dec- 11 Dec 2020			Registration for Fall 2020-2021		
2na Dec 2020			Commencement of Classes of Fall 2020-2021		

Text Book:

- 1. Concrete Mathematics, 2nd Edition, by Ronald L. Graham, Donald E. Knuth & Oren Patashnik
- 2. Introduction to Probability Models, 9th Edition, by Sheldon M. Ross

Reference Books:

- 1. Mathematical Recurrence Relations, by Kiran R. Desai
- 2. An Introduction to Probability and Statistics, 3rd Edition, by Vijay K. Rohatgi, A. K. Md. Ehsanes Saleh



Signature of Course Teacher