VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

BLOWN-UP SYLLABUS

COMMON SYLLABUS FOR 2002/2006/2010/2015/2017/2018 SCHEMES

ADVANCED MATHEMATICS –I

(A bridge course for Lateral Entry students of III semester B.E.)

(Common to all branches)

Course Code	**MATDIP301/31**	Exam Marks	100
Teaching Hours/Week (L:T:P:S)	4:0:0	Exam Hours	03
Total Hours of Pedagogy	40 hours		

Topics	Topics to be Covered with Article/Page No. from Text Book -1	Hours
Module-I (Complex Numbers)		
Definitions, complex numbers as an ordered pair, real and imaginary parts, modulus and amplitude of a complex number, equality of a complex number, addition, subtraction, multiplication and division of complex numbers, polar form, Argand diagram, exponential form, expressing in the form of $a \pm ib$, problems.	Discussion / exploration restricted to problems in Article No.19.1 (page No 639 to 640).	**10**
Module -II (Differential Calculus)		
Differentiation of n^{th} order of standard functions, Leibnitz theorem (Statement only) With examples, polar curves, Taylor's series, Maclaurin's series of simple functions for single variable	Discussion/exploration restricted to problems in Article No. 4.1(2), 4.2(Page No. 136 to 141). Discussion / exploration restricted to problems in ArticleNo.4.4 (1), 4.7(1), 4.7(2), 4.8(Page No. 147 to 150,161to 163).	**10**
Module-III (Partial Differentiation)		
Definition, Euler's theorem, total differentiation, Differentiation of composite and implicit functions. Jacobians- Illustrative examples and problems.	Discussion / exploration restricted to problems in Article No. 5.4(1), 5.7(1) (Page No. 205 to 208, 215 to 218).	**8**
Module-IV (Integral Calculus)		
Reduction formulae for $sin^n x, cos^n x$ (with proof) examples. Double integrals, simple problems, Triple integrals simple problems with standard limits. Beta and Gamma functions, properties, the relation between Beta and Gamma function, simple problems.	Discussion / exploration restricted to problems in Article No. 6.2, 7.1(Page No. 239 to 241, 274 to 276. Discussion / exploration restricted to problems in Article No.7.1,7.5,7.14,7.15(1),7.15(3),7.15(4),7.16 (Page No. 274 to 276, 283 to 284 and 302 to 306).	**12**
	Total Teaching Hours	**40**

Text Books:

1. B.S.Grewal: Higher Engineering Mathematics, Khanna Publishers, New Delhi, 43rd Ed., 2015.

2. H.K. Dass: Higher Engineering Mathematics, John Wiley and Sons, 10th Ed., 2016.