



FORMAT FOR COURSE CURRICULUM

L	T	P/S	SW/F W	TOTAL CREDIT UNITS
3	1	0	0	4

Course Title: Teaching of Mathematics **Course Code:** **Credit Units:** 4

Course Objectives: To assist teacher trainees in gaining a clear perspective of the nature of mathematics and its historical development with special emphasis on contributions of mathematicians and acquire skills in teaching mathematics by means of appropriate selection and structuring of instructional strategies, and accomplishing evaluation of mathematical learning.

Pre-requisites: The student teacher should have the knowledge of core mathematics concepts till class XIII. Have familiarity with the nature of mathematics.

Appreciate the role of mathematics in everyday life and its relevance to modern society.

Student Learning Outcomes: On completion of this course the students will be able to:

- develop perspective of the nature of mathematics and its historical development with special emphasis on contributions of Mauritian mathematicians;
- display skills in teaching mathematics
- Recognize mathematics concepts outside the classroom
- develop competencies of selecting and structuring instructional strategies
- display skill of transacting the different kinds of mathematical knowledge
- demonstrate skills in preparation and use of support materials for teaching specific topics in mathematics and
- exhibit proficiency of planning mathematics instruction, developing tools for evaluating mathematical learning, conducting pedagogical analysis, and planning action research

Course Contents/Syllabus:

	Weightage (%)
Module I Nature of Mathematics	20
Meaning and characteristics of mathematics	
Value of teaching mathematics at secondary level	
Correlation of mathematics-with its different branches and other subjects.	

<ul style="list-style-type: none"> • Contribution of Mathematicians (Ramanujam, Aryabhata, Bhaskaracharya, Euclid, Pythagoras) • Perspectives on psychology of teaching and learning of mathematics-constructivism ,Vygotskyan perspectives, Zone of proximal development 	
Module II Instruction Planning and curriculum analysis in Mathematics	20
<p>Aims and objectives of teaching mathematics of the secondary level</p> <p>Pedagogical analysis of unit of mathematics content</p> <p>Stating objectives in terms of specific learning outcomes</p> <p>Designing of objective based learning outcomes in cognitive, affective & psychomotor domains.</p> <p>Lesson Planning–Importance and Basic steps. Planning and preparation of lesson in Arithmetic, Algebra and Geometry.</p> <p>Unit Planning –Principals and steps of unit planning.</p> <p>Analysis of mathematics curriculum(NCF 2005)</p> <p>Mathematics textbook</p>	
Module III Approaches for learning and teaching of mathematics	20
<ul style="list-style-type: none"> • Project Approach of learning • Problem solving • Laboratory method • Computer Assisted Instruction (CAI) • Cooperative learning • Inductive Deductive method • Techniques of teaching Mathematics subject: Questioning-Answering, Assignment, Observation, Explanation and Illustration. 	
Module IV Learning support system in Mathematics	20
<p>Mathematics laboratory – concept and need, space and equipment for setting up a mathematics laboratory</p> <ul style="list-style-type: none"> • Utilization of learning resources in Mathematics: Charts and pictures, weighing and measuring instruments, drawing instruments, models, concrete materials, surveying instruments • Bulletin boards, Mathematics club, field trips and visits, Mathematics Kit, Calculators, Computers, Smart boards, Multimedia presentations. • Recreational mathematics-toys, riddles, stories, puppets, quiz, worksheets, role play, logo. 	
Module V Evaluation of Mathematics Learning	20
<ul style="list-style-type: none"> • Evaluation – meaning, need and nature. • Continuous and comprehensive evaluation in mathematics • Construction of achievement test • Characteristics of good test items in mathematics – test validity, reliability, authenticity and usability • Tools of evaluation-test, portfolios, project, concept maps, poster , rubrics, reflective experience. • Error analysis, diagnostic tests and remediation measures. • Being a reflective practitioner (action research) • Maintaining a Professional Portfolio 	

Pedagogy for Course Delivery:

Lecture, discussion, collaborative work, field work, project work, presentation

Lab/ Practical's details, if applicable: NA

List of Experiments: NA

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
100	0	70

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)	Test	Project	Portfolio	Attendance	End Term Examination
Weightage (%)	10	10	5	5	70

Lab/ Practical/ Studio Assessment :NA

	Continuous Assessment/Internal Assessment				End Term Examination		
Components (Drop down)							
Weightage (%)							

Text & References:

- Kumar, S.2009), Teaching of Mathematics, Anmol Publications , New Delhi.
- Mangal S.K. (1993),Teaching of Mathematics, Arya Book Depot, New Delhi
- NCERT , Content cum Methodology of Teaching Mathematics for B.Ed, New Delhi.
- NCERT(2005),National curriculum framework for teacher education, New Delhi
- NCTE (2009),National curriculum for teacher Education, New Delhi

- Schiro stefen Michael, Oral Storytelling and Teaching Mathematics, Sage Publications, , Canada, ISBN:9780761930105
- Sumner, W.L. ,Teaching of arithmetic & elementary mathematics, Oxford publications,New Delhi.

Any other Study Material:

- A John, Van de walle, Karen S.Karp, Jennifer M. Bay(2012), Elementary and Middle School Mathematics: Teaching Developmentally, Amizone Books, Canada,ISBN-13: 978-0132612265
- Carey L.M. (1988), Measuring and Evaluating School Learning, Allyn and Bacon, Boston.
- Chambers Paul(2010),Teaching Mathematics, Sage Publication South Asia, ISBN: 9788132105268
- Chapman L.R. (1970), The Process of Learning Mathematics, Pergamon Press, New York.
- David H., Maggie M. and Louann H. Lovin (2007) ,Teaching Mathematics Meaningfully: Solutions for Reaching Struggling Learners , Amizone Books, Canada, ISBN-13: 978-1557668660
- David Wood(1988),How Children Think and Learn, Blackwell, Publishers Ltd., New York.
- Intel (2003), Intel Innovation in Education, Intel teach to the Future – Student’s Work Book.
- Keeley Page and Tobey Rose Cheryl (2011), Mathematics Formative Assessment, Sage Publications, Canada, ISBN: 9781412968126