CALCULUS FOR TEACHER I

MATH 614

Course Description

This course is designed for teachers to investigate the concepts, techniques, and applications of elementary calculus. Topics include: the foundations of calculus, differentiation and integration of both algebraic and transcendental functions, and applications of calculus to the arts and sciences, professional studies and education.

Goals Of The Course

1. To provide a suitable approach to calculus for teachers in both elementary and secondary schools.

2. To explore potential techniques for teaching selected concepts of calculus.

3. To investigate connections between calculus and other subjects, such as arts and sciences and allied branches of mathematics.

Evaluation Measures
1.Participation in classroom activities
2.Preparation of assignments
3.Written examinations

Bibliography

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Demana, Franklin. 1998. *Graphing Calculator and Computer Graphing Laboratory Manual*, 2nd ed. New York: Addison-Wesley Publishing Company.

Geckmann, Charlene, *Exploring Calculus with a Graphing Calculator*. Reading, Mass. Addison-Wesley, 1992.

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Hughes-Hallett, Deborah, and Andrew Gleason, *Calculus: Single Variable*. New York: John Wiley, 1997.

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Stewart, James, Calculus with early transcendental functions, 4th Ed., Brooks/Cole, Pacific Grove Ca., 1999.

Thomas, George and Finney, Ross, *Calculus and Analytical Geometry*. Reading, Mass. Addison Wesley, 1992.

Addenda to Bibliography

Mathematical Association of America, *Resources for Calculus Collection*. Washington, DC, 1993.

Vol 1: Learning by Discovery: A Lab Manual for Calculus
Vol 2: Calculus Problems for a New Century
Vol 3: Applications of Calculus
Vol 4: Readings for Calculus

Periodicals

The Mathematics Teacher
The American Mathematics Monthly
School Science and Mathematics