

STUDY PLAN

MASTER IN (Curriculum and Instruction/ Methods of Teaching Mathematics) (Thesis Track)

Plan Number		2005	T
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I. GENERAL RULES CONDITIONS:

1. This plan conforms to the regulations of the Valid Regulations of programs of graduate studies.
2. Areas of specialty for admission in this program:
 - Holders of the Bachelor's degree in:
 - a-Mathematics & Actuarial Sciences
 - b-Math Education

II. SPECIAL CONDITIONS: None.

III. THE STUDY PLAN: (33) Credit Hours as follows:

1. Obligatory courses: (18) Credit Hours as follows:

Course No.	Course Title	Credit hrs.	Theory	Prac.	Pre-requisite
0801740	Research Methodology in Education	3	3	-	-
0802710	Curriculum Planning	3	3	-	-
0802750	Mathematics: Its nature and Teaching	3	3	-	-
0802751	Methods of Teaching Mathematics	3	3	-	-
0802754	Special Problems in Teaching Mathematics	3	3	-	-
0802755	Evaluation of Learning and Teaching Mathematics	3	3	-	-

2. Elective Courses: (6) Credit hours from the following:

Course No.	Course Title	Credit hrs.	Theory	Prac.	Pre-requisite
0802711	Theory and Research in Instruction	3	3	-	-
0802712	Curriculum Analysis	3	3	-	-
0802752	Current Trends in Mathematics Curriculum	3	3	-	-
0802753	Remedial Diagnosis in Teaching Mathematics	3	3	-	-
0802783	Computerized Instructional Programs	3	3	-	-
0802780	Computer in Education	3	3	-	-

3. Thesis: 9 Credit hours (0802799).

STUDY PLAN

MASTER IN (Curriculum and Instruction/ Methods of Teaching Mathematics) (Non - Thesis Track)

Plan Number			2005	N
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IV. GENERAL RULES CONDITIONS:

1. This plan conforms to the regulations of the Valid Regulations of programs of graduate studies.
2. Areas of specialty for admission in this program:
 - Holders of the Bachelor's degree in:
 - a- Mathematics & Actuarial Sciences
 - b-Math Education

V. SPECIAL CONDITIONS: None.

VI. THE STUDY PLAN : (33) Credit Hours as follows:

1. Obligatory courses: (24) Credit Hours as follows:

Course No.	Course Title	Credit hrs.	Theory	Prac.	Pre-requisite
0801740	Research Methodology in Education	3	3	-	-
0802710	Curriculum Planning	3	3	-	-
0802712	Curriculum Analysis	3	3	-	-
0802750	Mathematics: Its nature and Teaching	3	3	-	-
0802751	Methods of Teaching Mathematics	3	3	-	-
0802755	Evaluation of Learning and Teaching Mathematics	3	3	-	-
0802754	Special Problems in Teaching Mathematics	3	3	-	-
0802780	Computer in Education	3	3	-	-

2. Elective Courses: (9) Credit hours from the following:

Course No.	Course Title	Credit hrs.	Theory	Prac.	Pre-requisite
0802711	Theory and Research in Instruction	3	3	-	-
0802752	Current Trends in Mathematics Curriculum	3	3	-	-
0802753	Remedial Diagnosis in Teaching Mathematics	3	3	-	-
0802781	Instructional Technology	3	3	-	-
0802783	Computerized Instructional Programs	3	3	-	-

2. A comprehensive Exam (0802798).

080271 0 Curriculum Planning**(3 Credit hours)****Prerequisite: (None)**

Concept of curriculum and its different conceptions; explicit hidden and null curricula; Basic curriculum planning paradigms: the analytical (Tyier & Johnson models), the critical (Freire's model); curriculum designing: formulating curriculum goals and objectives, selection of content and learning experiences, organization of content and learning experiences, methods of instruction and learning; curriculum evaluation; curriculum implementation and curriculum quality control.

080271 1 Theory and Research in Instruction**(3 Credit hours)****Prerequisite: (None)**

Concepts and elements of instruction, teaching and learning; Instructional models: behaviorist, cognitive, social psychological, and humanistic; the constructivistic model; Research on instruction: the effectiveness model (process-product); Research on planning for instruction, instruction as decision making and adapting instruction to individual differences; Research on effectiveness of: teaching by inquiry, teaching by experience, project-based learning, problem solving, learning by cases and case history, simulations, role playing and team teaching; factors influencing instructional productivity: content, learners' and teacher's characteristic; learning environment; Evaluation of instruction.

080271 2 Curriculum Analysis**(3 Credit hours)****Prerequisite: (None)**

Concept and purpose of curriculum analysis; differences between Curriculum analysis and curriculum evaluation; Elements of curriculum analysis; curriculum logic and philosophy; analysis of goals; criteria of content selection, curriculum organization: organizing foci, principles of organization & organizational structures: Learning and instructional models; focus in curriculum, evaluation; curriculum coherence.

0802750 Mathematics: Its Nature and Teaching**(3 Credit hours)****Prerequisite: (None)**

A historical overview of mathematics curricula, Discussion of the mathematics curricula in some Arab and foreign countries. Studying the philosophical and educational aspects of mathematics including the related research. An overview of some mathematics educational theories such as piagefs, Bruner, Ausable, and constractivism theory.

0802751 Methods of Teaching Mathematics

(3 Credit hours)

Prerequisite: (None)

Different strategies in teaching mathematics (concepts, generalizations, skills and mathematical problem solving). Using modern technology in teaching mathematics like ordinary and graphic calculators and computers, some mathematical programs like Mathematical, different methods in teaching mathematics like games, stories, learning by doing, and using visual aids.

0802752 Current Trends in Mathematics Curriculum

(3 Credit hours)

Prerequisite: (None)

Analyzing mathematics Curricula and its Textbooks, current trends in planning mathematics Curricula, its design and structure. The students understanding of the general headlines of mathematics curricula and its foundations, and considering sequence, continuity and the integration of Jordanian mathematics curricula, identifying the functional and thinking approaches of mathematics curricula.

0802753 Remedial Diagnosis in Teaching Mathematics

(3 Credit hours)

Prerequisite: (None)

This course discusses the concepts at mathematical diagnosis; its importance and procedures, error analysis based on different theorems such as mal rule and repair theory. Also, this course sources remedial units in order to help students overcome or avoid their month errors.

0802754 Special Problems in Teaching Mathematics

(3 Credit hours)

Prerequisite: (None)

Student's weaknesses in performing mathematical operations regarding Integer numbers, Fractions, and others', students' weakness in understanding and solving mathematical problems especially the verbal ones. Students weakness in integrating mathematics to other disciplines. The problem of training teachers to teach different mathematical types of knowledge the possible solutions of mathematical problems in teaching mathematics. Discussion of the researches findings related to teaching mathematical problem.

0802755 Evaluation of Learning and Teaching Mathematics

(3 Credit hours)

Prerequisite: (None)

Evaluation: purposes, Types, relationship between instructional objectives and its educational levels. Evaluating students' development in learning

concepts, generalizations, skills, and mathematical problem solving. Evaluation through observational methods, worksheets, etc. Constructing questions that stimulate critical thinking.

0802780 Computers in Education

(3 Credit hours)

Prerequisite: (None)

This course deals with the concept of computer as a device; the role of computer technology in the learning and teaching process; Computer-Aided Instruction; Computer-managed instruction; Computer applications in education; Evaluating educational computer programs; Internet and its use in education; Data processing and statistical packages.

0802781 Instructional Technology

(3 Credit hours)

Prerequisite: (None)

The course focuses on the concept of Instructional Technology, and its relation to system approach. The new role of Learner and instructor, relationship between instructional technology and information technology, networking and multimedia, open learning techniques. It, also, introduces the barriers to educational technology transfer and future trends and research on instructional technology.

0802783 Computerized Instructional Programs

(3 Credit hours)

Prerequisite: (None)

This course will focus on computerized instructional packages such as, Authorware and Director to use it to design an interactive instructional programs; Computer packages for Mathematical and symbolic manipulations such as, Mathematics windows environment; Internet and its use in education, and how to design a web home page.

0801740 Research Methodology in Education

(3 credit hours)

Prerequisite (none)

This course deals with methodologies of educational research: identifying the research problem, questions and hypotheses, literature review, methods of sampling, research design, instrumentation, data collection and data analysis using descriptive statistics (frequencies, means, variance and standard deviation) and inferential statistics (chi-square, *t*-Test, regression and ANOVA etc.....).