

MASTER OF SCIENCE IN ECONOMICS (M.Sc. Economics)

AIMS, OBJECTIVES AND LEARNING OUTCOMES

Specific aims of the *M. Sc. Economics Degree* are given below:

- (i) Development of sound theoretical knowledge of the subject.
- (ii) Application of economic theories and enhancing problem solving ability.
- (iii) Coverage of new areas of specialization, as per market needs.
- (iv) Preparation for advanced studies leading to M. Phil. and Ph.D.
- (v) Training to produce quality teachers, researchers and policy makers.
- (vi) Dissemination of comprehensive knowledge focused at applied and quantitative economics.
- (vii) Equip the students with postgraduate level knowledge and skill comparable to the top standards at national institutions.

ADMISSION CRITERIA

Admission will be made on the basis of the criteria and of preference given in the Admission Regulations of the University of the Punjab. Eligibility criteria for admission in M.Sc. Economics are as given below:

Eligibility

- B.A./B.Sc. at least second division with a minimum of second division marks in Economics as an elective subject. OR
- B. Com. at least second division with a minimum of second division marks in Economics papers.

Order of Preference: Admission against all seats will be made according to the following order of preference:

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|--------|--------------------|--|
| First | B.A./B.Sc./B. Com. | First Annual Examination 2014 and Second Annual Examination 2013 |
| Second | B.A./B.Sc./B. Com. | First Annual Examination 2013 |
| Third | B.A./B.Sc./B. Com. | First/Second Annual Examination 2012 |

Basic Criteria: One fourth of total marks obtained in Matric plus one fifth of total marks obtained in Intermediate plus total marks in B.A./B.Sc./B. Com. plus 20 marks for Hafiz-e-Quran to be included where applicable. Admission criteria are the same for morning and afternoon (Replica) programs. Same courses are offered for both programs.

Distribution of Seats (Merit)

- For B.A./B.Sc. Graduates 55
- For B.Com. Graduates 5
- For candidates with PGDAE (PU) 9

Note: Fifty percent seats are reserved for applicants having graduated from colleges affiliated with the University of the Punjab, Lahore.

- (a) The applicants on extra curriculum seats must fulfill the basic criteria of admission of the Department of Economics.
- (b) The applicants with O level and A level must produce the equivalence certificate from the appropriate institution with their application.

MERIT DETERMINATION

For B.A./B.Sc./B. Com. Basic criteria plus marks in Economics out of 200 in B.A./B.Sc./B. Com. plus one-fourth of marks in Statistics or Mathematics (elective or optional), whichever is higher. Those applicants who have studied Mathematics and Statistics as a 100 marks (combined) subject in B. Com. will also have one-fourth of their marks in these subjects added to their merit.

For PGDAE Holders (Seats). Basic criteria plus total marks obtained in PGDAE out of 1000.

STRUCTURE OF COURSES

The new curriculum consists of contents of compulsory and optional courses, teaching and evaluation methodology. The number of courses has been enhanced keeping in view the changes in market demand for economists. In the new curriculum not only the contents of the courses have been updated but also new emerging economic issues and latest reading material has also been added. While preparing courses, special attention has been paid to enhance quantitative ability and application of knowledge for solving economic problems. It is expected that the curriculum will, hopefully, meet national and international standards and challenges.

The students have been provided a wider choice to choose from over forty courses. The students will be required to take 48 compulsory and 18 optional credit hours; consisting of a variety of courses under semester system. The compulsory courses have been revised and increased in number to cope with the new market demand. International Trade Theory course has been made compulsory, with special focus on WTO and other recent developments. It was neglected in the past which now-a-days is highly important because of new wave of globalization, liberalization and other emerging changes in the world. Besides, computer application, applied economics and econometrics have also been made compulsory. The burden of courses has been divided on equitable basis, upon two years consisting of four semesters.

The areas of specialization have also been increased to provide training in all major and important areas. The most demanding and new areas for specialization have been introduced,

which provide applied knowledge for new emerging jobs at national and international level. Now students can specialize in over 20 areas. For specialization, students have to take at least two courses in each area of specialization. The students can also opt for specialization in economics and finance. The students must specialize in two areas; for which they also have to pass comprehensive examination.

The contents of the core areas have been divided into two courses. The first course provides basic knowledge and trains students to handle advance courses. The aim is to prepare students for advanced studies. Thus, students having an ability but failure to get a chance for grooming will get a second chance and time to make up their deficiencies and cope with the advanced material, after completing first semester.

Special attention has been paid while preparing contents and chalking out teaching methodology focused to discourage shortcut methods of study to just obtain degree without gaining sufficient knowledge of the subject. Special focus of applied courses is to provide practical training so that students are well trained and they can compete in the open market. *There are four courses, which are applied in nature and require research work. It distinguishes M.Sc. degree from M.A. in Economics offered in different institutions.* Keeping in view the above, teaching methodology has been proposed which may be adopted in each course; depending upon the nature of courses and facilities available in the Department. To ensure quality education, all modern electronic and other relevant facilities are provided in the Department. Besides, for practical training and knowledge, study trips/tours to the industrial sector, stock market, policy formulation and implementation institutions/ departments and research organizations is a part of the curriculum. Such tours will be arranged by the Department during the conduct of relevant courses.

COMPULSORY AND OPTIONAL COURSES

The core compulsory and optional courses are given below:

Compulsory Courses

<i>Course Code</i>	<i>Courses</i>	<i>Credits</i>
Econ-500	Microeconomic Theory	4
Econ-600	Microeconomic Analysis (Pre-requisite, Econ-500)	4
Econ-601	General Equilibrium and Welfare Economics (Pre-requisite, Econ-500)	3
Econ-510	Macroeconomic Theory	4
Econ-610	Macroeconomic Analysis (Pre-requisite, Econ-510)	4
Econ-505	Islamic Economics	3
Econ-520	Mathematical Economics-I	3
Econ-521	Statistics for Economists	3
Econ-530	Development Economics: Theory and Application	3
Econ-540	International Trade Theory	4

Econ-550	Econometrics: Theory and Application-I	4
Econ-615	Research Methodology and Computer Application	4
Econ-690	Seminar in Applied Economics and Term Paper	4
Econ-695	Comprehensive Examination	

Optional Courses

Macroeconomics

Econ-511	Monetary Theory and Policy	3
Econ-611	Dynamic Macroeconomics	3

Industrial and Labour Economics

Econ-501	Managerial Economics	3
Econ-502	Industrial Organization	3
Econ-503	Industrial Economics and Game Theory	3
Econ-525	Labour Economics	3

Quantitative Economics

Econ-620	Mathematical Economics-II	3
Econ-650	Econometrics: Theory and Application-II	3

Development Economics

Econ-531	Sustainable Economic Development	3
Econ-532	Population and Economic Development	3
Econ-630	Economic Development Policy: Issues and Current Debate	3
Econ-631	Human Resource Development and Management	3

International Economics

Econ-640	International Finance	3
Econ-641	WTO and International Trade	3

Public Sector Economics

Econ-512	Public Sector Economics	3
Econ-552	Investment and Project Appraisal	3

Agriculture and Resource Economics

Econ-580	Agricultural Economics	3
Econ-680	Production Economics	3

Financial Economics

Econ-554	Corporate Finance	3
Econ-555	Money, Banking and Finance	3

Economic Thought and Comparative Economic Systems

Econ-574	History of Economic Thought	3
Econ-576	Comparative Economic System	3

Other Courses

Econ-570	Environmental Economics	3
Econ-571	Political Economy and Global Order	3
Econ-572	Regional Economics	3
Econ-573	Economic Principles and Techniques of Marketing	3
Econ-590	Internship in Economic Application	3
Econ-592	Independent Study	3
Econ-691	M.Sc. Thesis (In lieu of two optional courses)	6

OFFERING OF COURSES IN EACH SEMESTER

As per availability of faculty, the following courses will be offered in each semester:

Semester I

Course Code	Courses	Credit Hours
Econ-500*	Microeconomic Theory	4
Econ-510*	Macroeconomic Theory	4
Econ-520*	Mathematical Economics-I	3
Econ-521*	Statistics for Economists	3
Econ-505*	Islamic Economics	3
Sub Total		17

Semester II

Course Code	Courses	Credit Hours
Econ-550*	Econometrics: Theory and Application-I	4
Econ-615*	Research Methodology and Computer Application	4
Econ-530*	Development Economics: Theory and Application ¹	3
	Two optional Courses	6
Sub Total		17

¹If “Development Economics: Theory and Application” course is offered in Semester I, then “Islamic Economics” will be offered in Semester II and *vice versa*.

Semester III

Course Code	Courses	Credit Hours
Econ-600*	Microeconomic Analysis	4
Econ-610*	Macroeconomic Analysis	4
Econ-540*	International Trade Theory	4
	Two Optional Courses	6
Sub Total		18

Semester IV

Course Code	Courses	Credit Hours
Econ-601*	General Equilibrium and Welfare Economics	4
Econ-690*	Seminar in Applied Economics and Term Paper	4
	Two optional courses or M. Sc. Thesis	6
Econ-695*	Comprehensive Examination	Pass/Fail
Sub Total		14
Grand Total		66

*Compulsory courses

TWO OPTIONAL COURSES OR THESIS (6 Credits)

M.Sc. thesis will be of 6 credits in lieu of two optional courses. Evaluation of thesis will be done by a Committee consisting of Chairman of the Department of Economics, thesis Supervisor/Advisor and external examiner, appointed by the Dean. The student must defend his/her thesis. Students and teachers may attend the defence, with the permission of the Chair. In *viva voce* examination, questions may be asked relevant to the thesis and other courses pertaining to economic theory, current national and international economic issues.

TEACHING METHODOLOGY

The courses have been designed keeping in view background of students entering into the M.Sc. Economics program. The new students are given a chance to take refresher courses of the subject matter and to provide them some time to improve their academic deficiencies. The courses offered in the first semester are foundation courses. It will enable them to handle advanced material. Thus, the courses in the first semester are meant to prepare students for advanced studies. These courses will be taught keeping in view the level and background of the students. Therefore, teachers may introduce mathematical and other advanced techniques to teach advanced courses. The medium of instructions will be English. There will be a need

to use electronic devices for effective delivery of material for certain courses. In addition to above, it is recommended that there must be at least one seminar in each semester. Some of these seminars may be delivered by a team of students. Students must be given two assignments each month to make sure that they have covered the reading material. The instructor may not deliver lecture on the same topic, if he/she thinks that the seminar has covered the literature at the required level. However, it may be followed up by homework assignments, which must be focused upon problem solving, estimation of models and review of literature; as per relevance of the course. It is strongly recommended that, if possible, during the coursework at least two/three seminars must be arranged on current/important topics, which may be delivered by eminent experts/economists. The seminars may be followed by homework, which may reflect whether students have absorbed the material; for example, it may consist of a summary of the lecture and its critical review etc. Planning for the seminars must be done in the beginning of the course and announced within the first two weeks of the session.

Students are expected to observe high standards of ethics and moral values. Tutorial classes are held for this purpose and counseling is provided so that students can cope with their problems. The aim of tutorial classes is to improve the personality and moral values of the students. It is also focused to improve the personality of the students, general knowledge and career.

The tutorial classes will be mandatory; bi-weekly or at least once in a month. In the tutorial classes, students must be given a chance to share their academic and other problems. Other discussions may include ethical, moral, national, international and social welfare orientation activities. The focus must be on development of personality of the students and patriotism.

ASSESSMENT STRATEGY

To assess whether students have gained and absorbed sufficient knowledge of the subject, it is important to evolve appropriate strategy and techniques to test the students. The student must maintain minimum grade point average as per University rules. The following strategy has been evolved to provide guidelines for evaluation:

- (i) A clear mechanism for evaluation is announced and provided in writing to the students at the beginning of the course/semester, *i.e.* along with course outlines which is provided in the first week of the beginning of the course.
- (ii) To ensure full coverage of the reading material, periodical homework/assignments are assigned and duly evaluated. These assignments may be given proper weightage in the final internal evaluation/awarding marks.
- (iii) Two types of seminars and workshops shall be held during the courses. The seminars will be arranged for each course by the Department:
 - (a) by experts, other than the teacher concerned. It must be followed by homework assignments.

- (b) by a group of students or individuals to train them for teaching and reproducing the material absorbed.

DURATION OF THE PROGRAM

- (i) Total duration of the program will be of two academic years, *i.e.* four semesters; each semester consisting upon 18 weeks.
- (ii) A student has to complete 66 credit hours to become eligible for M.Sc. degree. Besides 75% attendance in classes is mandatory, otherwise, student will not be allowed to sit in the terminal examination.

RE-SIT EXAMINATION

The students who cannot appear in examination because of valid excuse/reason as approved by the Chairman, Department of Economics, shall be allowed to appear in re-sit examination within one week after the examination subject to the payment of special examination free of Rs. 1,000 for each course. If the number of courses is more than 2 then a *lump sum* of Rs. 2,500 shall be paid as special examination fee to the Department.

PROBATION

The promotion of a student on probation will be allowed twice in all the programs. If a student in the first semester obtains GPA less than 2.00 and greater than or equal to 1.50 will be considered on probation but in the later semesters the student will be considered on probation if he/she scores CGPA less than 2.00 and greater than or equal to 1.70. In case student does not achieve minimum desired CGPA 2.00 in any semester after availing opportunity of two probations, he/she shall be dropped from the rolls of the Department and cannot be re-admitted in any case by the same department.

MIGRATION

Migration of a student may be allowed subject to the fulfillment of Migration Regulations of the University of the Punjab. The credits earned in the previous institution may be permitted to be transferred to the University of the Punjab subject to the condition of similarity/equivalence with the University courses. The students of the University of the Punjab are also allowed to migrate from one department to another department with the mutual consent of the heads of departments. The migration in all cases shall only be permissible if the student fulfils requirements of merit and availability of seats. The credits earned in the parent department of the student will be considered for exemption of similar/identical courses by the department to which student is admitted. The decision of the department will be final. The migration will not be allowed during the 1st year of any course of study. No credit hour of a course will be transferred if the grade is less than 'C'.

EVALUATION SYSTEM

1. The teacher is responsible for the evaluation of work/performance of the students of his class and for the award of grades to them on the basis of such evaluation.
2. The number and nature of tests and assignments depends on the nature of course. However, in case of taught courses there will be at least one home assignment, sessional works and two tests (Mid Semester and Final Examination) in each course with the weightage as under:

A. Assignments	25%
B. Mid Semester	35%
C. Final Semester	40%

To pass a course, student must obtain 'D' grade (50% marks) cumulative in mid-term and final semester examinations and in Assignment out of assigned marks.

3. There shall be no choice in questions in the Mid Semester and Final examination papers.
4. The scripts of each activity (A, B and C of 2 above) shall be shown to the students concerned by the teachers within one week, taken back immediately in accordance with the announced schedule along with the examination schedule.
5. The mid-term examination shall be after eight weeks of the commencement of the semester. The final examination shall be held at the end of the 17th week, *i.e.* during the 18th week.
6. In view of the weightage for various examinations the duration of the papers will be as follows:

(i) Mid Semester Examination	One and half hour
(ii) Final Semester Examination	Two hours
7. Examination should be held on consecutive days excluding holidays. The schedule of paper showing to the students shall be displayed along with the examination schedule by the teacher.
8. Home assignments shall be deposited with the teacher concerned as scheduled by the teacher.
9. The teacher concerned shall prepare three copies of the awards. He shall retain one copy with him and send one copy to the Chairman, Department of Economics. He shall also display a copy of the result on the Notice Board. The scripts of mid-term and final semester examinations and assignments will be kept for three months after the end of the semester.
10. The teacher-in-charge will report **unfair means cases** to the Chairman who shall place those before Departmental Examination Committee for necessary action under the rules. The Committee will decide unfair means cases as per university rules.

Any candidate detected in giving or receiving assistance, or found guilty of copying from any paper, book or note, or allowing any other candidate to copy his answer book, or using or attempting to use these or any other unfair means, shall be dropped from the program. The Chairman can visit and inspect any examination and take action for unfair means cases.

11. In case a candidate is unable to appear in part or whole of the Mid Semester or Final examinations of a semester on medical grounds, he may be allowed to appear in the Special Mid Semester or Final examination to be arranged by the Department;

Provided that he/she fulfills the condition of having attended at least 75% of classes held in a course.

12. In case of a valid reason a student may freeze his/her studies maximum for one year (two semesters) subject to the permission of Chairman, Department of Economics. However, freezing in 1st semester is not allowed. During the “freezing period” the applicant will lose his studentship status and shall not be entitled to avail any facility like hostel/medical/transport, which University extends to its regular students. The student will rejoin the same semester which he/she has frozen on the basis of genuine reason and will be entitled to the facilities curtailed for the freezing period.

GRADING SYSTEM (as per University Grading System, subject to change)

1. Letter grading should only be used for representing the individual courses and not for semester GPA or CGPA.
2. Equivalence in numerical grades, letter grades and grade points are:

Percent Marks	Letter Grade	Grade Points
85 and above	A	4.00
80-84	A-	3.70
75-79	B+	3.30
70-74	B	3.00
65-69	B-	2.70
61-64	C+	2.30
58-60	C	2.00
55-57	C-	1.70
50-54	D	1.00
Below 50	F	0.00
Withdrawal	W	

3. Maximum possible Grade Point Average is 4.0.
4. Minimum Cumulative Grade Point Average for obtaining 2 years M.A./M.Sc. degree is 2.00.

5. A fraction of mark in a course is to be counted as '1' mark, e.g. 64.1 or 64.9 is to be shown as 65.

RULES OF PROMOTION

1. At the end of the each semester a student must obtain a minimum Grade Point Average (GPA) of 2.00 to be promoted to the next semester.
2. In case a student is able to obtain GPA of 1.70 or more but less than 2.00, except first semester where GPA of 1.50 or more but less than 2.00, he/she will be promoted to the next semester on probation (1st probation). If the student does not achieve desired CGPA 2.00 but obtains CGPA greater than or equal to 1.70 will go to 2nd (last) probation. The candidate, who fails to secure 1.50 GPA in the First Semester or 1.70 CGPA in the subsequent semester(s), shall stand automatically dropped from the rolls.
3. At the end of the each semester (from second semester to the second last semester), a student must obtain a minimum Cumulative Grade Point Average (CGPA) of 2.00 for promotion to the next semester. Every student will have the right to avail probation twice in the following semesters.
4. A student has to obtain CGPA 2.00 in the last semester of each program for the award of degree.
5. In the third semester, a student will be required to repeat those course(s) of first semester in which he/she had failed subject to the payment of examination fee of Rs. 5,000 per course.
6. In the fourth semester, a student will be required to repeat those course(s) of second semester in which he/she had failed subject to the payment of examination fee of Rs. 5,000 per course.
7. If a student gets D grade(s), he/she can repeat the course(s) when offered to improve his/her grade(s). The student who completes all courses and interested to improve D grade(s) he/she shall be allowed to improve D grade(s) within the allowable period (number of years) of two additional years (four semesters) subject to the payment of examination fee of Rs. 5,000 per course.
8. A student, who completes all the courses and has not been required to repeat any course(s), obtains CGPA less than 2.00 but not less than 1.90 at the end of the 4th semester in case of 2 years M.A./M.Sc. may be allowed to repeat 12 credit hour courses (varying from 2 to 4 credit hours) in which he/she had obtained the lowest grades, in order to improve the CGPA so as to obtain the minimum of 2.00 CGPA failing which he/she shall not be awarded degree and removed from the rolls of the Department.
9. In case a student repeats the course(s) for the improvement of grade(s) which he/she has already taken, the better of the two grades of the course(s) will be counted for CGPA calculations.

REQUIREMENTS FOR AWARDING OF DEGREE

The students shall complete the following requirements for the award of degree:

1. A student must have a proper admission in the program of the Department and should have earned a minimum of 66 credit hours for M.Sc. Economics. In addition to compulsory courses, students must pass two courses each in two areas of specialization. Students may add/drop courses as per announced dates by the Department of Economics. A student must obtain 50% marks to pass a course.
2. If the student opts for M.Sc. thesis, he/she must:
 - (i) Submit approved research proposal in due course of time. It must have been approved by the concerned quarters.
 - (ii) Submit approved thesis (in lieu of two optional courses) within the time limit. Other university rules will apply.
3. A student must pass comprehensive examination at the end of fourth semester. Minimum Cumulative Grade Point Average (CGPA) for obtaining M.Sc. Economics degree is 2.00.

DEPARTMENTAL EXAMINATION COMMITTEE

As per University rules departmental examination committee is formulated.

Constitution of Committee. The Department has an Examination Committee comprising of the following:

- Chairman of the Department
- Two to three senior most faculty members
- The concerned teacher if needed.

The functions of the Committee are:

- (a) Ensure content coverage of courses by comparing tests with the course outline and work plan provided by the teacher.
- (b) Monitor classroom activities as laid down in the course outline.
- (c) Examine all problems regarding uniformity before the declaration of results.
- (d) Address and dispense student complaints.
- (e) Address UMC cases and make decisions under the semester rules.

The decision of the Committee shall be final.

BRIEF INTRODUCTION OF COURSES

Detailed contents of courses are available in the Department. Students are advised to get a copy of these courses.

Microeconomic Theory

This course aims at providing comprehensive knowledge of consumer, firm, and market theory and their applications. In this course, the students are expected to develop deductive reasoning and comprehend classical methodology pertaining to models of consumer behavior, firms' decision making, perfect and imperfect market structure, general equilibrium analysis, uncertainty, risk analysis, game theory, and welfare economics. Special importance is placed on developing problem solving skills to the issues related to microeconomics. It is expected that the course would enable its participants to comprehend major microeconomic models which will help in business decision making.

Prerequisite for this course is Principles of Microeconomics theory and intermediate level calculus.

Macroeconomic Theory

The main objective of this course is to familiarize students to the fundamental theories and basic models in macroeconomics. The course is covered in two parts. The first part consists of topics such as national income and its determination, consumption, savings and investments, demand and supply of money, and aggregate demand and supply. The topics in this part would be analyzed at an intermediate level. The second part of this course includes advanced level topics. The treatment to topics, such as exchange rates and open economy, long run economic growth, economic fluctuations, and macroeconomic policy debate involves the use of mathematical tools and models. Special emphasis is placed on scrutinizing the models developed in this course on the basis of real time macroeconomic data. The participants of this course would be expected to comprehend key debates over macroeconomic issues and policy-dilemmas faced by various economies.

Prerequisite for this course is Principles of Macroeconomics theory and intermediate level calculus.

Mathematical Economics

The aim of this course is to equip students with the basic mathematical tools that are useful as an approach to economic analysis. Participants of this course would approach the fundamental theories of micro-economics and macro-economics using mathematical models. In particular, students would learn the static, *i.e.* equilibrium analysis, comparative-static analysis, and static optimization problems. The participants, after the completion of this course, are expected to understand and analyze economic models and their multivariate relationship, encompassing the economics theories.

Prerequisite for this course is a basic knowledge of introductory-level algebra.

Statistics for Economists

The main objective of this course is to acquaint students with the basic techniques of statistical methods with strong emphasis on its application to economic theories and principles. The material covered in this course would enable students in not only testing the

predictions of economic theories at an elementary level, but it would also help develop the basic skills necessary to take advanced courses like econometrics and growth models. Major topics covered in this course are measures of central tendency, probability, sampling design, estimation techniques, analysis of variance, non-parametric statistics, and Bayesian analysis. It is expected that after the completion of this course, students would be comfortable in handling and analyzing data and use of estimation techniques.

No prerequisite for this course is required. However, basic knowledge of statistics will be an added advantage.

Islamic Economics

The main objective of this course is to acquaint students with the economic aspects of Islamic principles and their application to analyze contemporary economic problems. The course helps to build nexus between the Islamic principles and mainstream economic theories. The topics covered in this course range from microeconomic to macroeconomic concepts pertaining to fundamentals of Islamic thoughts. It focuses on, among others, the contributions in development economics of Abu Yousaf to debate on good governance and functioning of market system of Ibn-e-Khuldon. Major topics in this course are Islamic models of finance, banking systems, welfare and distribution of income, zakat and social justice, and current process of Islamization of economic system in Pakistan.

Prerequisite for this course is basic knowledge of holy Qura'an, Hadith, Shariah and economic theory.

Development Economics: Theory and Application

This is a course about the understanding of the economies popularly known as developing countries. In this course, students are introduced to the conceptual meaning of economic development while distinguishing it from economic growth and the common characteristics of developing countries. The course develops necessary abilities in the students to generalize and apply development economic theories to solve the most pressing problems of the developing world. It helps to understand structure and functioning of institutions, markets, and policies adopted in the developing countries to accelerate welfare of their citizens. The course covers theories of economic growth and models and their application pertaining to contemporary issues of the developing world, such as poverty, income distribution, unemployment, and macroeconomic destabilization. After the completion of this course, students are expected to contribute to the society with their opinions about the development problems from various forums of public and private organizations.

A considerable knowledge of introductory-level macroeconomic and microeconomic theory is an advantage; otherwise no special prerequisite for this course is required.

Econometrics: Theory and Application

This course aims at introducing students to the quantitative aspects of various econometric theories. This is achieved through providing the students with an understanding of basic econometric theory and models. In particular, the topics covered in this course are: the nature of regression analysis, single- and multi-variable regression analysis, assumptions of the classical regression model, econometric modeling, regression on dummy dependent variable, simultaneous equation models, and time series econometrics. Special emphasis is placed on the application side of this course. Participants would make use of statistical softwares to undertake regression analysis. Students after the completion of this course are expected to be comfortable in data analysis, apart from contributing to empirical research and analyzing projects.

Prerequisite for this course is intermediate-level knowledge of calculus, statistics, and economic theory.

International Trade Theory

This course is designed to familiarize students with international economics. It is divided into two parts. The first part covers the trade theory, and the other international finance. Emphasis in this course is on the rigorous treatment of traditional and current trade and exchange rate theories and models. Models of gains from trade, pattern of trade, international flow of factors of production, trade related competitive theories, liberalization reforms, balance of payments problems, determinants of exchange rate, and future markets are some of the topics covered in this course. Furthermore, implications of international flow of funds and debt crises are covered in depth. By providing training-built analytical ability, which is particular for policy formulation, this course would prepare students for jobs in both public and private sector organizations.

Prerequisite for this course is intermediate-level knowledge of economic theory and mathematics.

Human Resource Development and Management

The course covers important topics like development of human resources and their role in economic growth; comparative picture with other countries draws lessons which could be useful for the development of Pakistan. Besides, investment in human capital in Pakistan is analyzed in details. Important issues like migration and urban unemployment is covered in this course. Gender issues pertaining to female labour participation and status of woman, as development agent is addressed in details. Employment and unemployment pattern is analyzed under different models and definitions of unemployment. Historical pattern of employment and unemployment is taught in detail and forecast for the same will be analyzed. The course also covers current international economic developments and their impacts on human resource development; like globalization, WTO, labour migration, poverty & income distribution. New global vision on above cited topics is provided in this course.

WTO and International Trade

The students can take more than three courses to specialize in International Economics. This new course on WTO has been introduced, which covers trade related aspects in details. Beginning from the emergence of GATT and the birth of WTO is analyzed in historical perspective; major trading rules pertaining to WTO are covered. An important aspect of this course is that implication of WTO rules are taught not only pertaining to developing countries and Pakistan but these rules are analyzed in global perspective. Important issues like competitiveness, Net food importer, BOP support, trade and environment, subsidies and state trading, electronic commerce and welfare impacts of free trade are taught in this course. It is an important and new course which is rarely taught elsewhere.

Research Methodology and Computer Application

This course aims at preparing students to strengthen their research abilities. The contents of this course are designed to facilitate research. Apart from learning research techniques and developing such necessary skills, the participants of this course would also develop scientific and rational thinking to produce new knowledge. Students will be taught to build and estimate econometric models. Besides, application of economic theory is taught in such a way so that student can test and empirically verify economic theories and models.

Prerequisite for this course is intermediate-level knowledge of economic theory, statistics, and econometrics along with some degree of writing and computer skills.

General Equilibrium and Welfare Economics

It is a compulsory course. Microeconomic theory course is pre-requisite for this course. Following major topics are covered in this course: General Equilibrium Theory: Multi market equilibrium in a competitive setting: Walras Law; Existence of equilibrium; Stability of equilibrium; Money in a general equilibrium setting. Technical and allocative efficiency and case of exchange economy. Linear programming technique to general equilibrium theory (Activity Analysis). The Von-Neuman, the input-output Model. Pareto optimal principle, production and resource allocation and efficiency of Perfect Competition. Measurement of Changes in Welfare: Consumer Surplus, Compensation Principle. The Theory of Social Choice: Social welfare function. Arrow's Impossibility Theorem, Marginal cost pricing. Joint Products, Externalities, Income distribution and compensation principle. Theory of second best and its application in Public Sector and international trade.

Seminar in Applied Economics and Term Paper

It is a special applied course, which covers different aspects of economic theory and its application. The course is offered in the last semester. In this course, estimation of econometric models and applied economic research is taught. For this purpose, students are required to apply the knowledge and theory to produce a research paper. Completion of this course provides confidence among the students to embark upon research on important national and international economic issues.

Thesis

The structure of courses for M.Sc. Economics is designed in such a way that a graduate student is fully trained for teaching, research and jobs related to national and international organizations. M.Sc. thesis is offered to a limited number of students who have potential to produce publishable research work. Students are encouraged to take M.Sc. thesis. The M.Sc. thesis students must earn high CGPA in their course work. Besides, good writing skill is a pre-requisite to take thesis.

OPTIONAL COURSES AND SPECIALIZATION

Major objective of these courses is to provide training in nearly all those areas of economics which are of significant importance as per market demand. All the courses cover state-of-the-art material in the respective areas. A wide choice of selection comprising sixteen courses and more than ten areas of specialization is offered. Students can choose optional courses according to their career ambitions. They may select a topic of their interest for their thesis and take a course in the same area to build a strong background in a particular area. Students can also choose two optional courses in such a way as to combine them with relevant compulsory courses and end up specializing in two areas. A student is required to specialize in minimum of two areas.

MASTER OF SCIENCE IN ECONOMICS (Replica)

The same rules that apply to M.Sc. Economics (Morning) program will be applicable to M.Sc. Economics (Replica) program except for the following:

1. There is no preference for year of passing. Two marks will be deducted from the marks obtained out of 100 marks for each late year to a maximum of two years.
2. There is no age limit for admission.
3. Hostel facility is not available for the students of M.Sc. Economics (Replica).
4. No medical facility is available as these are non-resident students.