

UNIVERSITY OF MUMBAI



1 year Post Graduate Diploma Course in Financial Risk Management

(Credit Based Semester and Grading System
with effect from the academic year 2014-15)

Syllabus

For

POST GRADUATE DIPLOMA COURSES in
Management

(Effective from Academic Year 2014-15)

Title

Name of the program – Post Graduate Diploma Courses

Nature of the program – One year diploma course of Mumbai University

Eligibility Criteria

A learner for being eligible for admission into the Post Graduate Diploma Courses shall have passed the Bachelor's degree examination of this university or any other university recognized as equivalent thereto.

Preamble

The working professionals often need to upgrade their skills to match ever evolving industry requirements. In today's era of information, corporates are increasingly demanding professionals with in – depth and exhaustive knowledge in a specific domain. The new diploma courses and its curriculum will help realign the current industry expectations in terms of the skill sets demanded under new business environment

The Current Scenario

- Changing facets of businesses under globalised environment
- Dynamism in industry practices and evolution of technology
- Emergence of new businesses and business practices
- Expectations of Key stakeholders viz. industry, academicians and students

Objectives of new Diploma programme

The new diploma programme prepare students for a career in diverse sectors nationally as well as globally. It facilitates absorption & application of knowledge in theory and practice across multiple functional areas of management and enables students to adopt an integrated approach towards real life situations and circumstances

The Objectives of Diploma courses are: -

- To help students to concentrate on goals tailored to career
- To provide some flexibility to institutions to impart new and contemporary curriculum
- To design curriculums in line with expectations of stakeholders – viz. corporate, students and community
- To upgrade skills in cross functional areas for the benefit of working professionals.

The goal is to imbibe and enhance the following skill sets

- Focused on specific industry requirements
- Exposure to global practices
- Enhancement of cross – functional skills
- Encourage Peer based learning and team work

Highlights of the New Diploma Programmes & their Curriculum

- 1) Introduction of new domain study with required skill sets in Commercial Banking, Retail Banking, Capital Markets, Investment Management, Financial Risk Management and Project Management
- 2) Shorter duration course with focused learning of specific industry requirements
- 3) Introduction of new subjects having current industry expectations

Potential Opportunities in the Banking Sector

There is immense scope for job opportunities in the Banking Sector. It is estimated that with close to 50% of workforce in public sector banks set to retire in the next few years, the banking industry will soon be among the top employers offering 5 – 7 lakh jobs. Apart from core banking jobs, there will be an increase in backend jobs, including those in processing and outsourcing.

The new employees need to be trained well and made competitive to face the challenges of the banking sector. Thus this course will essentially bridge the talent gap in public and private sector.

Details of the new diploma programmes

Structure of the Diploma Courses Curriculum

Post Graduate Diploma in Financial Risk Management – Semester I

Statistics & Mathematics For Risk Management
Stochastic Processes & Monte Carlo Simulations
Excel VBA
Financial Markets & Products
Financial Risk Management & Portfolio Management

Post Graduate Diploma in Financial Risk Management – Semester II

Implementing Derivatives Pricing Models in Excel VBA
Market Risk Management & Liquidity Risk Management
Credit Risk Management
Operational Risk Management
Dissertation Project

Project

As part of the curriculum, the students will work on a project assignment of 100 marks relevant to their chosen Diploma discipline. They will submit a project report to the institute at the end of the second semester.

Faculty Students Ratio

Faculty students ratio shall be 1:15. For staffing pattern, there shall be one Full time faculty at each diploma programme. The rest shall be drawn from Industry as domain experts, who shall be designated as visiting faculty/adjunct faculty. Institutes are expected to attract more people with industry experience to participate in this programme. To attract more industry experts to participate in these programmes, they should be suitably remunerated.

Teaching Pedagogy

Teachers are expected to impart knowledge through lectures and new , innovative pedagogical approaches. Some of these techniques are: -

Group Discussions, Lectures, Role plays, Field Work, Workshops, Counseling Sessions, Watching Educational and Informative Videos, Assignments, Quizzes, Tests, Live Projects, Case Studies, Presentations, Simulations, Industrial Visits, Participation in academic and extra – curricular activities, inculcation of industry specific skills and training & development sessions

The lectures can be scheduled every day evening from 06.00 pm to 09.00 pm or on Saturdays and Sundays to accommodate all subjects and to suit the convenience of employed students who would enroll for value addition in their present status.

Rules and Regulations related to ONE YEAR POST GRADUATE DIPLOMA COURSES

Eligibility	A learner for being eligible for admission into the ONE YEAR POST GRADUATE DIPLOMA COURSES shall have passed the Bachelor's degree examination of this university or any other university recognized as equivalent thereto.
Duration	The duration of POST GRADUATE DIPLOMA COURSES courses shall be of one year comprising of two semesters. There shall be one University Examination in each semester.
Fees	The tuition fees for POST GRADUATE DIPLOMA COURSES shall be Rs 50000/year.
Examination	<p>The examination for POST GRADUATE DIPLOMA COURSES shall be semester based and held twice a year on such dates as may be fixed in that behalf.</p> <p>A candidate must forward his application for admission to the examination to the controller of examination on or before the date fixed.</p> <p>A Student who has once registered himself for the POST GRADUATE DIPLOMA COURSES, but has not appeared at the said examination or has appeared and failed there at and desires to reappear at a subsequent examination shall renew his registration for the examination at least three months prior to the date of commencement of the examination after paying the prescribed fees.</p>
Reappearance in Examination	On payment of a fresh fee, a candidate who fails to pass the examination in a subject(s) shall be allowed to reappear thereat on a subsequent occasion.
Evaluation	A candidate shall be examined in the subjects mentioned in the POST GRADUATE DIPLOMA COURSES at the end of each semester.

Diploma in Financial Risk Management – Semester – I

Sr. No.	Subject	Teaching Hours		Assessment Pattern					
		No. of Sessions of 90 minutes	No. of Sessions of 90 minutes per week	Continuous Assessment	Semester End Examination	Total Marks	Duration of Theory Paper	No of Credits	
1	Statistics & Mathematics For Risk Management	30	2	40 UA	60 UA	100	3	4	
2	Stochastic Processes & Monte Carlo Simulations	30	2	40 UA	60 UA	100	3	4	
3	Excel VBA	30	2	40 UA	60 UA	100	3	4	
4	Financial Markets & Products	30	2	40 UA	60 UA	100	3	4	
5	Financial Risk Management & Portfolio Management	30	2	40 UA	60 UA	100	3	4	
				Total No of Credits					20

UA: - University Assessment; IA: - Internal Assessment

Diploma in Financial Risk Management – Semester – II

Sr. No.	Subject	Teaching Hours		Assessment Pattern				
		No. of Sessions of 90 minutes	No. of Sessions of 90 minutes per week	Continu ous Assessm ent	Semester End Examinati on	Total Marks	Duration of Theory Paper	No of Credits
1	Implementing Derivatives Pricing Models in Excel VBA	30	2	40 UA	60 UA	100	3	4
2	Market Risk Management & Liquidity Risk Management	30	2	40 UA	60 UA	100	3	4
3	Credit Risk Management	30	2	40 UA	60 UA	100	3	4
4	Operational Risk Management	30	2	40 UA	60 UA	100	3	4
5	Dissertation Project	100 Marks						4
			Total No of Credits					20

UA: - University Assessment; IA: - Internal Assessment

Semester	Total No of Credits
Semester I	20
Semester II	20
Total	40

DIPLOMA IN FINANCIAL RISK MANAGEMENT
SEM – I

Statistics & Mathematics For Risk Management (15 Sessions of 3 Hours Each)

Sem I

SL no	Particulars	Sessions
1	Linear Algebra for Finance Financial Calculus Numerical Methods for Finance Introduction to Financial Statistics Introduction to Probability Theory Probability Distributions Hypothesis Testing and Statistical Inference Econometrics Forecasting Volatility and Correlations	13 sessions of 3 hours
2	Case studies and Presentations	2 sessions of 3 hours

Stochastic Processes & Monte Carlo Simulations (15 Sessions of 3 Hours Each) Sem I

SL no	Particulars	Sessions
1	Stochastic Processes Random Walk Markov Process Martingale Process Weiner Process Geometric Brownian Motion	7 sessions of 3 hours
2	Monte Carlo Simulations Simulation Techniques Monte Carlo Simulation in Excel Monte Carlo Simulation using VBA	7 sessions of 3 hours
3	Case studies and Presentations	2 sessions of 3 hours

Excel VBA (15 Sessions of 3 Hours Each) Sem I

SL no	Particulars	Sessions
1	Financial Programming in VBA	13 sessions of 3 hours
2	Case studies and Presentations	2 sessions of 3 hours

Financial Markets & Products (15 Sessions of 3 Hours Each) Sem I

SL no	Particulars	Sessions
	Financial Markets Financial Institutions Financial Instruments Fixed Income Instruments and their Valuations Fixed Income Risk Measures Derivatives Products and Strategies	13 sessions of 3 hours
	Case studies and Presentations	2 sessions of 3 hours

Financial Risk Management & Portfolio Management (15 Sessions of 3 Hours Each) Sem I

SL no	Particulars	Sessions
1	Financial Risk Management Introduction to Risk Management Financial Economics Modern Portfolio Theory Measures of Risk Value-at-Risk Applications of Value-at-Risk	7 sessions of 3 hours
	Portfolio Management Portfolio Construction Methods Portfolio-based Performance Analysis Risk Budgeting Risk Monitoring Hedge Funds Strategies and Risk Management	6 sessions of 3 hours
2	Case studies and Presentations	2 sessions of 3 hours

DIPLOMA IN FINANCIAL RISK MANAGEMENT
SEM – II

Implementing Derivatives Pricing Models in Excel VBA (15 Sessions of 3 Hours Each) Sem II

SL no	Particulars	Sessions
1	Equity Options Pricing	2 sessions of 3 hours
2	Interest Rate Derivatives Pricing	2 sessions of 3 hours
3	Currency Derivatives Pricing	3 sessions of 3 hours
4	Swaps Pricing	3 sessions of 3 hours
5	Valuation of MBS	3 sessions of 3 hours
6	Case studies and Presentations	2 sessions of 3 hours

Market Risk Management & Liquidity Risk Management (15 Sessions of 3 Hours Each) Sem II

SL no	Particulars	Sessions
1	<p>Market Risk Management</p> <p>Identifying Market Risk Exposures Metrics of Market Risk Measuring and Managing Market Risk Exposure Application of Market Risk management Active Risk and Tracking Error Risk Decomposition and Risk Attribution Stress Testing Scenario Analysis Hedge Fund Risk Management Risk Management Strategies Measuring and Managing Corporate Exposures</p>	10 sessions of 3 hours
2	<p>Liquidity Risk Management</p> <p>Asset liquidity & cash-flow liquidity Liquidity risk measures like MCO, Stress Testing, LD, WBG & MTF, LVaR</p>	3 sessions of 3 hours
6	Case studies and Presentations	2 sessions of 3 hours

Credit Risk Management (15 Sessions of 3 Hours Each) Sem II

SL no	Particulars	Sessions
1	Credit Rating Agencies and Credit Ratings External & Internal Credit Ratings Credit Transition Matrices Bankruptcy & Default Subprime Mortgages and Subprime Securitization Securitization & Special Purpose Vehicles Counterparty Risk and OTC Derivatives Counter-Party Default Risk and Settlement Risk Probability of Default (PD), Loss Given Default (LGD) and Recovery Rate Credit Scoring, Credit Spreads, Expected and Unexpected loss Contingent claim approach and the KMV Model Default and default-time correlations Portfolio Credit Risk Credit Risk Management Models Credit VaR Risk mitigation techniques Economic Capital & Regulatory Capital Sovereign Risk and Country Risk Evaluation Reference Interest Rates Comparative Regulations for OTC Derivatives Sovereign Credit Default Swaps: roles and regulations Capital planning at large banks The European Credit crisis and transmission of sovereign risks	13 sessions of 3 hours
2	Case studies and Presentations	2 sessions of 3 hours

Operational Risk Management (15 Sessions of 3 Hours Each) Sem II

SL no	Particulars	Sessions
1	Calculating and Applying risk-adjusted return on capital (RAROC) Model risk - Model validation Evaluating the performance of risk management systems Validating VaR models Enterprise Risk Management (ERM) Economic Capital Operational loss data - Frequency and severity distributions and Modeling and fitting distributions Failure Mechanics of Dealer Banks Risk appetite frameworks Data aggregation and risk reporting Regulation and the Basel Accords: Minimum Capital Requirements Methods for Calculating Credit, Market, and Operational Risk Liquidity Risk Management Stress Testing Revisions to the Basel II Accord The Basel III framework Comparing Basel II/III to Solvency II	13 sessions of 3 hours
2	Case studies and Presentations	2 sessions of 3 hours

Dissertation Project 100 Marks

Scheme of Assessments for Subjects of 100 Marks

- ❖ The Semester end Examination will be conducted for 60 Marks.
- ❖ Internal Assessments will be conducted for 40 Marks.

The allocation of 40 marks shall be on the following basis: -

- a) Periodical class tests held in the given semester (20 Marks)
- b) Presentations throughout the semester (10 Marks)
- c) Attendance and Active participation in routine class instructional deliveries (05 Marks)
- d) Overall Conduct as a responsible student, mannerism and articulation and exhibition of leadership qualities in organizing related academic activities. (05 Marks)

Note: A Student has to separately secure minimum 50% marks (i.e 20 out of 40) in the internal assessments and secure minimum 50% marks (i.e 30 out of 60) in the Semester End Examination in every subject to be declared as Pass.

Question Paper Pattern for Semester End Examination (60 Marks)

There will be Seven Questions in all.

Q1 would be compulsory and would carry 20 Marks

In addition to Q1, there would be six questions. Each question would carry 10 Marks. Each of these Six Questions will have three sub – questions and each sub – question would carry 05 Marks

Students have to attempt any four out of the remaining six Questions and within each question; students have to attempt any two out of three sub – questions.

In all, students have to attempt five questions i.e (Q1+Any Four of the remaining)

Q1 – 20 Marks (Compulsory)

Attempt Any Four out of the Remaining Six Questions

Q2 (a) ----- (5 Marks)

(b) ----- (5 Marks)

(c) ----- (5 Marks)

Any two from (a) or (b) or (c) ----- (5x2) = 10 Marks

Q3 (a) ----- (5 Marks)

(b) ----- (5 Marks)

(c) ----- (5 Marks)

Any two from (a) or (b) or (c) ----- (5x2) = 10 Marks

Q4 (a) ----- (5 Marks)

(b) ----- (5 Marks)

(c) ----- (5 Marks)

Any two from (a) or (b) or (c) ----- (5x2) = 10 Marks

Q5 (a) ----- (5 Marks)

(b) ----- (5 Marks)

(c) ----- (5 Marks)

Any two from (a) or (b) or (c) ----- (5x2) = 10 Marks

Q6 (a) ----- (5 Marks)

(b) ----- (5 Marks)

(c) ----- (5 Marks)

Any two from (a) or (b) or (c) ----- (5x2) = 10 Marks

Q7 (a) ----- (5 Marks)

(b) ----- (5 Marks)

(c) ----- (5 Marks)

Any two from (a) or (b) or (c) ----- (5x2) = 10 Marks

Credit Based Grading System for One Year Diploma Course Semester End Examinations

Credit Point:

- ❖ A Credit Point denotes the quantum of effort required to be put in by a student, who takes up a course. In other words, it is an index of number of learning hours prescribed for a certain segment of learning.

Learning Hours

Learning Hours for Subjects of 100 Marks (60+40)

Learning Hours consist of Classroom teaching hours and other complementary learning activities indicated here below

- 1) Classroom teaching hours ((15 Sessions X 3 Hours = 45 Hours))**
- 2) Other Complementary learning activities (75 Hours)**

The learning activities consist of the following:

- ❖ Reading, Introspection, Thoughtful Reflection, Group Discussions, Lectures, Field Work, Workshops, Counseling Sessions, Watching Educational and Informative Videos, Assignments, Live Projects, Case Studies, Presentations, Preparation for Examinations, Participation in academic and extra – curricular activities, inculcation of industry specific skills and training & development sessions.
- ❖ The total learning hours would be thus equivalent to **45+75=120 Hours for subjects of 100 Marks**

Credit Point Computation

- One credit is construed as equivalent to 30 learning hours.

Credit completion and Credit accumulation:

- ❖ Each module of an academic program has been assigned specific credit points defining successful completion of the course under study.
- ❖ Credit completion or Credit acquisition may be considered to take place after the learner has successfully cleared all the evaluation criteria with respect to a single course.
- ❖ A learner who successfully completes a 4 CP (Credit Point) course is treated to have collected or acquired 4 credits. His performance above the minimum prescribed level (viz. grades / marks obtained) has no bearing on the number of credits collected or acquired.
- ❖ A learner keeps on accumulating more credits as he completes additional courses.

Introduction of Grading System at the University of Mumbai

A well designed evaluation system that integrates the aforesaid parameters having due attention to their relative importance in the context of the given academic programme.

What is Grading?

- ❖ Grading, in the educational context is a method of reporting the result of a learner's performance subsequent to his evaluation. It involves a set of alphabets which are clearly defined and designated and uniformly understood by all the stake holders.
- ❖ A properly introduced grading system not only provides for a comparison of the learners' performance but it also indicates the quality of performance with respect to the amount of efforts put in and the amount of knowledge acquired at the end of the course by the learners.

The Seven Point Grading System

- ❖ A series of meetings of all the Deans & Controller of Examinations were held to discuss the system of grading to be adopted at the post graduate level. Mumbai University, subsequently in its Academic Council meeting and in its Management Council meeting resolved to adopt and implement the **Seven (07) Point Grading System** from the academic year 2012-13.

The Grade Point and the grade allocation shall be as per the Grade Table given below:

Proposed Grades for Post Graduate courses			
7 Point Scale for POST GRADUATE Courses			
Range of Scores	Grade	Grade Point	CGPA range
75 & above	O	7	6.5 - 7
70 - 74.99	A	6	5.5 - 6.49
65 - 69.99	B	5	4.5 - 5.49
60 - 64.99	C	4	3.5 - 4.49
55 - 59.99	D	3	2.5 - 3.49
50 - 54.99	E	2	2 - 2.49
< = 49.99	F (Fail)	1	< 2

Note: - Consider 1 Grade Point is equal to Zero for CG calculations in respect of failed learner/s in the concerned course/s.

Conversion of Marks to Grades and Calculations of GPA (Grade Point Average)

- ❖ In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be only on the basis of marks obtained; however these marks shall be converted later into Grades by a mechanism wherein the overall performance of the Learners can be reflected by the overall evaluation in terms of Grades.
- ❖ Abbreviations used for gradation needs understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulas used are as follows:-

Abbreviations and Formula's Used:-

G: Grade

GP: Grade Points

C: Credits

CP: Credit Points

CG: Credits X Grades (Product of credits & Grades)

Σ **CG:** Sum of Product of Credits & Grades points

Σ **C:** Sum of Credits points

$$\text{SGPA} = \frac{\Sigma \text{CG}}{\Sigma \text{C}}$$

ΣC

SGPA: Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

CGPA: Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

Special Point to Note:

While calculating the CG the value of Grade Point 1 shall be considered as Zero (0) in case of learners who failed in the concerned course/s obtaining marks below 50.

After calculating the SGPA for an individual semester and the CGPA for entire programme, the value can be matched with the grade as given in the Grade Point table as per the Seven (07) Points Grading System and expressed as a single designated GRADE such as O, A, B, etc....

The SGPA of learners who have failed in one subject or more than one subjects shall not be calculated.

Illustrations of the Calculations: -

Credit Points and Grading Calculations for First Semester

1 Credit = 30 Learning Hours

Result: - Passing in All Courses with more than 50% Marks

Courses In Semesters	No of Learning Hours	Credits Per Course (C)	Marks Obtained (%)	Grade	Grade Points (G)	$\sum CG = C \times G$	$SGPA = \frac{\sum CG}{\sum C}$
Statistics & Mathematics For Risk Management	60	4	55	D	3	12	88/20=4.4
Stochastic Processes & Monte Carlo Simulations	60	4	60	C	4	16	
Excel VBA	60	4	70	A	6	24	
Financial Markets & Products	60	4	80	O	7	28	
Financial Risk Management & Portfolio Management	60	4	50	E	2	8	
Total	480	$\sum C=20$					
Credit Earned = 20						$\sum CG = 88$	Grade C
Passes							

Credit Points and Grading Calculations for First Semester

1 Credit = 30 Learning Hours

Result: - Fails in One Course or More than One Courses with Less than 50% Marks

Courses In Semesters	No of Learning Hours	Credits Per Course (C)	Marks Obtained (%)	Grade	Grade Points (G)	$\Sigma CG = C \times G$	SGPA = $\frac{\Sigma CG}{\Sigma C}$
Statistics & Mathematics For Risk Management	60	4	55	D	3	12	-----
Stochastic Processes & Monte Carlo Simulations	60	4	60	C	4	16	
Excel VBA	60	4	70	A	6	24	
Financial Markets & Products	60	4	80	O	7	28	
Financial Risk Management & Portfolio Management	60	4	45	F	1	0	
Total	480	$\Sigma C=20$					
Credit Earned = 16						$\Sigma CG = 80$	Grade F
Fails							

- ❖ Note: - Consider 1 Grade Point is equal to Zero for CG calculations of failed learner/s in the concerned course/s.
- ❖ The student has been awarded 1 Grade Point, even though he has failed in the subject of Financial Risk Management & Portfolio Management, however, 1 Grade Point is equal to Zero for CG calculations of failed learner/s in the concerned course/s.
- ❖ The SGPA has not been calculated as the student has failed.

