



**Nagindas Khandwala College (Autonomous)**

**MKES's Nagindas Khandwala College (Autonomous),  
Gate No 5, Bhavishya Bharat Campus, S. V. Road, Malad (West)  
Mumbai-400 064**

**Program Code: UHCAS**

**Bachelor of Commerce (B.Com.) (Honours) Actuarial Studies**

**Three Year Integrated Honours Programme**

**Six Semesters**

*Course Structure*

**Under Choice Based Credit, Grading and Semester System**

**To be implemented from Academic Year- 2019-2020**

**Progressively**

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## 1. Preamble

### **Actuarial Profession & Increasing demand for Actuaries**

The profession of Actuaries was not sufficiently ventured in the past in India due to lack of awareness. The core of actuarial work lies within insurance. Since Insurance industry in India was nationalized for long from 1956-1999, Actuarial studies as a profession could not develop and prosper. With the opening up of the Indian economy and globalization, demand of actuaries increased many-fold in India. The demand of actuaries is rising world over in the sphere of enterprise risk management. Actuaries evaluate, manage and advise on all types of quantifiable risks (including financial, operational financial risks scientifically. They are considered to be the best risk managers as they use their knowledge of business and economics, together with their understanding of probability theory, statistics and investment theory, to provide strategic, commercial and financial advice. Actuaries are the only professionals who focus on estimation of uncertain future liabilities. Only qualified actuaries can certify such liabilities across the globe. Actuarial knowledge has a critical utility in data analytics and enterprise risk management.

Today, India has only 350+ qualified actuaries against 50,000 world over. Job of Actuaries in the world is considered to be the Best job, mostly it ranks in the top 5 jobs (often Ranked #1) for the last 4 decades. With risk-based capital regime on the anvil, it is estimated that there will be a 30-40 percent increase in number of actuarial positions required by insurers. Demand of actuaries is steadily growing in data analytics. Greater demand would emerge when the industries in India begin employing actuaries for their risk management function. Majority of actuaries abroad are engaged in risk management.

This Bachelor of Commerce (Honours) – Actuarial Studies Degree Program is designed keeping in mind the latest syllabus of the actuarial profession (that has just come in force in 2019) and the skills needed to become job-ready in the field of actuaries and analytics. Detailed coverage of all aspects of the profession will provide students the right blend of knowledge and skills along with Global exposure.

## 1.1 About Khandwala College:

Khandwala College is a multi-faculty institution (Estd. 1983), affiliated to University of Mumbai. It offers 13 UG, 5 PG, 4 Add On, 3 Ph. D programs with 9 Departments and 2 Research Centers imparting education to more than 6500 students. The **Vision** of the institute includes Education for all, Education for the youth and Education for the future of our country.

The **Mission** is to serve the society at large and students belonging to linguistic minority in particular with commitment, dedication and devotion. The **Quality Policy** includes commitment towards imparting **Quality Education to youth**, enabling them to **develop right attitude, professional competence** and inculcating right **ethical values**.

The institution has been awarded “A” Grade (Third Cycle) by National Assessment and Accreditation Council, **Best College** by University of Mumbai (2012), **lead college** for a cluster of colleges, Educational Excellence Award by Indus Foundation, USA and **Best Ensemble Faculty (Academic Brilliance Awards – 2013)** by Education Expo TV’s Research Wing for Excellence in Professional Education & Industry and ISO 9001:2015 certified by TUV Nord. We have been awarded **IMC Ramkrishna Bajaj National Quality Commendation Certificate** in 2013-14. Our college has been awarded Autonomous status from 2016. Khandwala College, as an Autonomous College; is offering a new **Bachelor of Commerce (Honours) Programme in Actuarial Studies as a Three Year Integrated Programme** – with Six Semesters *Course Structure* - Under Choice Based Credit, Grading and Semester System.

## 1.2 Vision and Mission of Khandwala College

### Vision

Education for all

Education for the youth

Education for the future of our country

## **Mission**

The college's focus is on the future of our students irrespective of their gender and place in society. Every student is like a flame reaching out to the brightness of the sun i.e. the bright future of India

## **2. Objectives**

This program of B. Com. (Honours) - Actuarial Studies is structured to provide graduates with practical skills required in international actuarial field. The main objective of B. Com. (Honours) - Actuarial Studies Program are:-

- To provide intensive theoretical & practical knowledge in all aspects of risk management.
- To provide an integrated perspective of management functioning along with a good amount of exposure to real life cases / technical knowhow on crucial aspects of Insurance products pricing
- To produce bachelors with a strong background in Mathematics, Statistics, Economics, Finance and Analytics to deal with Data Analysis in the areas of Financial Sector such as Insurance, Banking, Capital Market and other Financial Applications in view of sustained growth envisaged in Insurance Industry and KPO industry at large in the Financial sector.
- To develop students' competencies to identify the possibility of a bad event, or a catastrophe; evaluate a solution to minimize the possibility of said bad event, or catastrophe, from occurring and also analyze the losses, that the risk might bring about, and devise solutions to reduce its consequences to the economy.
- To make actuarial study students job-ready in the profession of actuaries and analytics.
- To provide expert's knowledge to undertake Actuarial profession and become a catalyst in the process of becoming actuary.

### **3. Eligibility, Selection and Admission Criterion:**

Candidates for being eligible for admission to the three-year course leading to the Degree of Bachelor of Commerce (Honours) – Actuarial Studies, shall be required to have passed the Higher Secondary School Certificate Examination (10+2) or equivalent qualification from a recognized Board/ University or Body recognized as equivalent thereof by the Senate of the University, with minimum 50% aggregate marks or equivalent in any Stream.

#### **3.1 Eligibility Criterion:**

- Std. XII passed in any discipline with 50% or more marks on the aggregate and having English as a subject
- Good Communication Skills

#### **3.2 Selection & Admission Criterion for Eligible Candidates:**

- The interested students shall register for Aptitude Test and Interview.
- Reservations as per University rules will be applicable.

The admission of students shall be based on

- Academic and non- academic credentials till date
- Performance in Aptitude Test [comprising of questions in Mathematics/Statistics, English, Logical Reasoning, Analytical Ability], and
- Performance in Personal Interview

### **3.3 Eligibility for the Award of the Degree:**

A candidate shall be eligible for the award of the Degree only if he / she has undergone the prescribed course of study in Khandwala College affiliated to the University for a period of not less than three academic years, passed the examinations of all the Six Semesters earning 132 credits, and have completed 8 credits earned by successfully completing 2 certifications, letter grade of at least D or above (i.e. O/ A+/A/ B+/B/C/D) in core.

### **3.4 Intake Capacity**

One Division with maximum 60 students in the first year.

### **3.5 Fee structure**

The tuition fees for B.Com. (Honours) in Actuarial Studies will be Rs. 150,000 per annum

## 4. Ordinances & Regulations for - B. Com. (Honours) – Actuarial Studies

### 4.1 General Guidelines:

The Credits are defined in terms of the learner's hours which are divided into two parts such as Actual and Notional. The value of a particular course can be measured in number of Credit Points. The value of One (01) Credit is equal to 15 Hours of learners' load.

The scheme of Examination shall be divided into TWO parts i.e. Continuous Internal Evaluation including Assignment, Projects, Seminars, Case Studies and Class Tests which will be of 25 marks and the Semester End Examinations which will be of 75 marks. The semester wise Credit Points will be varied from course to course but the value of Credits for Under-Graduate Programme shall be of 132 Credits. Students will have to earn 8 extra credits under autonomy. This will be achieved by doing 2 certifications of 4 credits each from a group of 6 certifications.

#### Scheme of Total Credits

Sr. No.	Year	Credits
1	Year 1	44
2	Year 2	44
3	Year 3	44
	Total Credits from Academics	132
	<b>Additional Credits for 2 Certifications (4*2)</b>	8
	Total Credits for Award of Degree	140

#### List of Certifications for Additional Credits

- The courses offered by SoA- USA, CAS-USA, IFoA-UK, IAI-India at relevant time
- IBM-Big Data Analysis, and
- Other Options with Prior Approval by the Faculty



## 4.2 Credit Based Evaluation System Scheme of Examination

For all 6 semesters, the performance of the learners shall be evaluated into two components. The first component shall carry 25% marks which will be a Continuous Internal Evaluation while the second component shall carry 75% marks at semester end examination.

The allocation of marks for the Continuous Internal Evaluation 25% and Semester End Examination 75% are as shown below:

### Structure of Continuous Internal Evaluation – 25% Weight- 25 Marks

Sr. No.	Particulars	Marks
1	Two periodical class tests held in the given semester, (Best of the TWO) OR	20
2	Specific Term Work Module/assessment modes – as decided by the institution in the beginning of the semester (like field/experimental work, Short Quiz; Objective test, lab practical, test etc. and written assignments, Case study, Projects, Posters and presentations etc. for which the assessment is to be based on class presentations wherever applicable)	20
3	Active participation in routine class instructional deliveries (and in practical work, tutorial, field work etc. as the case may be)	5
Total		25

**Semester End Examination** will be organized after all modules of the course are taught in the class. It will be a written examination / or as per the needs of the course a practical examination or a combination of both. This examination will be for 75 % weight. For all Courses having Practical and Theory Component, Examination will be conducted for total 150 marks, (100 marks for Theory and 50 marks for Practical) which would then be converted into 100 marks.

The assessment of Continuous Internal Evaluation and Semester End Examination as mentioned above for the Semesters I to VI shall be processed by the College – ‘Institutions of their Learners’ and issue the grade cards to them after the conversion of marks into grade as the procedure mentioned below.

The learners to pass a course shall have to obtain a minimum of 40% marks in aggregate for each course where the course consists of Continuous Internal Evaluation & Semester End Examination. The learner shall obtain minimum of 40% marks (e.g. 10 out of 25) in the Continuous Internal Evaluation and 40% marks in Semester End Examination (e.g. 30 Out of 75) separately, to pass the course and minimum of Grade D in each project, wherever applicable, to pass a particular semester. A learner will be said to have passed the course if the learner passes both the Continuous Internal Evaluation & Semester End Examination.

#### **Passing Standards**

<b>Grade</b>	<b>Marks%</b>	<b>Grade Points</b>
O	80 & Above	10
A+	70 to 79.99	9
A	60 to 69.99	8
B+	55 to 59.99	7
B	50 to 54.99	6
C	45 to 49.99	5
D	40 to 44.99	4
F	Less than 40	0

#### **4.3 Carry Forward of The Marks in Case If The Learner Gets ‘F’ Grade In One Or More Subjects:**

- A learner who PASSES in the Continuous Internal Evaluation Examination but FAILS in the Semester End Examination of the course shall reappear for the Semester End Examination. Marks for Continuous Internal Evaluation shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

- A learner who PASSES in the Semester End Examination but FAILS in the Continuous Internal Evaluation of the course shall reappear for the Continuous Internal Evaluation Examination of that course. However, his/her marks of the Semester End Examination shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.
- For Courses without practical: In case of a learner who is reappearing for the Continuous Internal Evaluation Examination, the examination will consist of one project of 25 marks.

#### **4.4 Allowed to Keep Terms (ATKT) Facility:**

As per University rules and regulations

##### **Additional Examinations:**

- A. Continuous Internal Evaluation: As per University rules and regulations Class test or assignment for Continuous Internal Evaluation as per University rules and regulations
- B. Semester End Examinations: As per University rules and regulations

##### **Eligibility to Appear For Additional Semester End Examination:**

As per University rules and regulations

##### **Mode of Conduct of Semester End Additional Examination:**

As per University rules and regulations

#### **4.5 Evaluation of Projects (Wherever Applicable)**

- A learner who PASSES IN ALL THE COURSES BUT DOES NOT secure minimum grade of D in projects as applicable, has to resubmit a fresh

project till he/she secures a minimum of grade D. His/her marks in the theory papers that the learner has passed will be carried forward and he/she shall be entitled for grade obtained by them on passing.

- The evaluation of project and viva-voce examination shall be by awarding grade in the ten point scale.
- A learner shall have to obtain minimum of grade D (or its equivalent marks) in project evaluation and viva-voce taken together to obtain 25% marks in project work.

#### **4.6 Calculations of GPA & SGPA**

As per University rules and regulations

## 5. Teaching Methodology

### 5.1 Classroom Sessions:

- **Regular Lectures:** Lectures shall be delivered by experienced faculties along with visiting faculties and experts from the Industry.
- **Assignments & Projects:** Shall be assigned at regular intervals of the course. It offers an opportunity for students to meet, interact and collaborate with the experienced people from the industry.
- **Knowledge Workshops and Industry seminars:** Shall be organized at regular intervals to keep the students informed about the latest developments in the Industry. These workshops will be uniquely designed with a focus on practical industry – relevant topics.
- **Simulated Events:** Shall be conducted to get the real feel of organizing and managing an activity like risk analysis in Investments, in insurance business etc. The exercise gives the student's an opportunity to identify the finer nuances of industry thereby helping them to identify key success factors and areas of improvement.

### 5.2 Guest Lectures and Case Studies:

- **Guest Lectures:** Eminent people from the industry shall be invited as guest speakers to impart lessons and their rich experiences on various fields related to areas of actuary to the student. They also focus on imparting training around management concepts that have today become essential skills to carve a niche in the industry.
- **Case Studies:** Case studies highlighting various practical and situational issues shall be regularly discussed during classroom sessions. The discussion caters towards identifying what went wrong in the case and what could have been done

in a better manner, this helps train students to handle such situations in the future. The exercise also improves the analyzing and analytical of our students.

### 5.3 Innovative & Interactive Learning Technology

- **Educational wikis:** It keeps track of education – oriented wikis, establishes constructive interactions with them, and researches their technology, activity, culture, processes and impact.
- **Creative Presentation Ideas:** Prezi is a powerful communication and presentation tool that aims to replace Power point Presentation. Equipping students with the knowledge of this tool helps in preparing them to adapt easily to every changing dynamics of the corporate world.
- **CREATE through Technology:**

**Communication and Collaboration:** Google Apps provides students a chance to learn how to use webmail services, calendar (shared calendaring), G-Talk (instant messaging and voice/video chat) and Drive (online document creation & sharing).  
**Education through Blogs:** A powerful and interactive medium for learning. Ideal to educate, discuss and share innovative ideas across a large and diverse set of audiences.

- **Unparalleled Internships & Practical Training**

Students at Khandwala College get opportunities to participate in National & International Events round-the-year. They get Practical Training during internship.

**In-House Events:** Students are provided with an opportunity to work on conferences and seminars organized in-house right from the start to finish, to provide them with hands-on experience, which helps them to gain excellent event organization skills

## 6. Ad-hoc Board of Studies

Following Academicians, Faculty members & Experts have been consulted for the contents and development of the Syllabus for this course:

1. Principal Dr. (Mrs.) Ancy Jose- Principal, Khandwala College
2. CA Dr. Varsha Ainapure – M Com., FCA, Ph.D., Post-Doc (USA), HOD, Dept. of Accountancy, Khandwala College
3. Shri Mukund G Diwan, Fellow of Institute and Faculties of Actuaries (FIA) of UK, Fellow of Institute of Actuaries of India (FIAI), Fellow of Insurance Institute of India (FIII), Consulting Actuary and Partner of M/s. K A Pandit, Actuaries and Consultants, Former President of Actuarial Society of India, Former Chairman of Life Insurance Corporation of India
4. Mayur Ankolekar, Fellow of Institute and Faculties of Actuaries (FIA) of UK, Fellow of Institute of Actuaries of India (FIAI), Associate of Institute of Chartered Accountants (ACA), M. Com., L.L.B., Consulting Actuary, Ankolekar& Co., Secretary, Advisory Group on Sustainable Development and Microinsurance- Institute of Actuaries of India, Visiting Faculty at YCMOU's Study Center for Actuarial Science
5. Prof. Rajendra Shah, Former Chairman of Board of Studies of Statistics, Former Member of Academic Council, University of Mumbai, part qualified Actuary from IAI, Co-founder and CEO of DS Actuarial Education Services, Center Head and Faculty at YCMOU's Study Center for Actuarial Science.

**Curriculum Framework for *Bachelor of Commerce (B.Com.)*  
(Honours) in Actuarial Studies**  
**Under Choice Based Credit, Grading and Semester System**

**Course Structure**

**First year**

**(To be implemented from Academic Year- 2019-2020)**

**FIRST YEAR**

No.	Semester I		Credits	No.	Semester II		Credits
<b><i>Ability Enhancement Compulsory Courses (AECC)</i></b>				<b><i>Ability Enhancement Compulsory Courses (AECC)</i></b>			
1	Foundation Course <b>1911UCHAFC</b>	AECC-1	3	1	Environmental Studies <b>1921UCHAES</b>	AECC-2	3
<b><i>Core Courses (CC)</i></b>				<b><i>Core Courses (CC)</i></b>			
2	Actuarial Statistics 1A [Theory and Practical] <b>1912UCHAAS</b>	CC-1	4+2	2	Actuarial Statistics 2A [Theory and Practical] <b>1922UCHAAS</b>	CC-3	4+2
3	Actuarial Statistics 1B [Theory and Practical] <b>1913UCHAAS</b>	CC-2	4+2	3	Actuarial Statistics 2B [Theory and Practical] <b>1923UCHAAS</b>	CC-4	4+2
<b><i>Discipline Specific Elective(DSE) Courses</i></b>				<b><i>Discipline Specific Elective(DSE) Courses</i></b>			
4	Actuarial Accounting 1 <b>1914UCHAAC</b>	DSE-1	3	4	Actuarial Accounting 2 <b>1924UCHAAC</b>	DSE-2	3
<b><i>Skill Enhancement Compulsory Courses (SEC)</i></b>				<b><i>Skill Enhancement Compulsory Courses (SEC)</i></b>			
5	R Programming [Practical] <b>1915UCHARP</b>	SEC-1	4	5	Advanced Excel with Macros [Practical] <b>1925UCHAEX</b>	SEC-2	4
	<b>TOTAL</b>		<b>22</b>		<b>TOTAL</b>		<b>22</b>



**SECOND YEAR**  
**(To be implemented from Academic Year- 2020-2021)**

No.	Semester III		Credits	No.	Semester IV		Credits
<b>Core Courses (CC)</b>				<b>Core Courses (CC)</b>			
1	Actuarial Mathematics 1A <b>1931UCHAM</b>	CC-5	4	1	Actuarial Mathematics 2A <b>1941UCHAM</b>	CC-10	4
2	Actuarial Mathematics 1B <b>1932UCHAM</b>	CC-6	4	2	Actuarial Mathematics 2B <b>1942UCHAM</b>	CC-11	4
3	Actuarial Mathematics 1C <b>1933UCHAM</b>	CC-7	4	3	Actuarial Mathematics 2C <b>1943UCHAM</b>	CC-12	4
4	Actuarial Mathematics 1 [Practical] <b>1934UCHAM</b>	CC – 8 (5, 6,7) related	4	4	Actuarial Mathematics 2 [Practical] <b>1944UCHAM</b>	CC- 13 (10,11,12 related)	4
5	Insurance Principles and Designing of Insurance Products [Theory and Practical] <b>1935UCHAIP</b>	CC- 9	4+2	5	Data Analytics [Theory and Practical]  <b>1945UCHADA</b>	CC-14	4+2
<b>TOTAL</b>			<b>22</b>	<b>TOTAL</b>			<b>22</b>

**THIRD YEAR**  
**(To be implemented from Academic Year- 2021-2022)**

No.	Semester V		Credits	No.	Semester VI		Credits
<b>Core Courses (CC)</b>				<b>Core Courses (CC)</b>			
1	Actuarial Economics 1 1951UCHAE	CC-15	4	1	Actuarial Economics 2 1961UCHAE	CC-17	4
<b>Generic Elective (GE 1)</b>				<b>Generic Elective (GE 2)</b>			
2	Actuarial Business Management 1952UCHABM	GE-1	3	2	Insurance Laws 1962UCHAIL	GE-2	3
<b>Core Courses (CC)</b>				<b>Core Courses (CC)</b>			
3	Actuarial Project – 1 1953UCHAP	CC - 16	6	3	Actuarial Project – 2 1963UCHAP	CC-18	4
<b>Discipline Specific Elective(DSE) Courses</b>				<b>Discipline Specific Elective(DSE) Courses</b>			
4	Any <u>one</u> from DSE Group A 1954UCHA SL / LI / EB / FR	DSE-3	3	4	Any <u>one</u> from DSE Group B 1964UCHA SI / NL / HI / FI	DSE-5	3
5	Any <u>one</u> from DSE Group A DSE Group A Subjects	DSE-4	3	5	Any <u>one</u> from DSE Group B DSE Group B Subjects	DSE-6	3
	<ul style="list-style-type: none"> <li>• Securities Laws</li> <li>• Life Insurance</li> <li>• Employee Benefits and Laws</li> <li>• Financial Reporting Standards</li> </ul> 1955UCHA SL / LI / EB / FR				<ul style="list-style-type: none"> <li>• Social Insurance</li> <li>• Non-life Insurance</li> <li>• Health Insurance</li> <li>• Finance and Investment</li> </ul> 1965UCHA SI / NL / HI / FI		
<b>Ability Enhancement Compulsory Courses (AECC)</b>				<b>Ability Enhancement Compulsory Courses (AECC)</b>			
6	Actuarial Business Communication 1 1956UCHABC	AECC -3	3	6	Actuarial Business Communication 2 1966UCHABC	AECC -4	3
	<b>TOTAL</b>		<b>22</b>		<b>TOTAL</b>		<b>22</b>

## **DISTRIBUTION OF CREDITS**

Year 1	44
Year 2	44
Year 3	44
Total	132
Additional credits for 2 Certifications (4*2)	8
Total	140

## **Code Description**

Foundation Course: **1911UCHAFC**

19	Year
11	Semester & Sl. No.
U	Under Graduate
C	Commerce Stream
H	Honours
A	Actuarial Studies
FC	Course Name

**Bachelor of Commerce (Honours) Programme in  
Actuarial Studies  
Three Year Integrated Programme -  
Six Semesters**

**Basic Structure: Distribution of Courses**

1	<b>Ability Enhancement Compulsory Course (AECC)</b>	4 Courses of 3 Credits Hrs. each (Total Credits Hrs. 4*3)	12
2	<b>Skill Enhancement Compulsory Course (SEC)</b>	2 Courses of 4 Credits Hrs. each (Total Credits Hrs. 2*4)	8
3	<b>Core Course -Practical -Theory</b>	8 Courses of 6 Credits Hrs. each (Total Credits Hrs. 8*6=48) 10 Courses of 4 Credits Hrs. each (Total Credits Hrs. 10*4=40)	88
4	<b>Discipline Specific Elective (DSE)</b>	6 Courses of 3 Credits Hrs. each (Total Credits Hrs. 6*3)	18
5	<b>Genetic Elective (GE)</b>	2 Courses of 3 Credits Hrs. each (Total Credits Hrs. 2*3)	6
	<b>Total Credits Hrs</b>		132