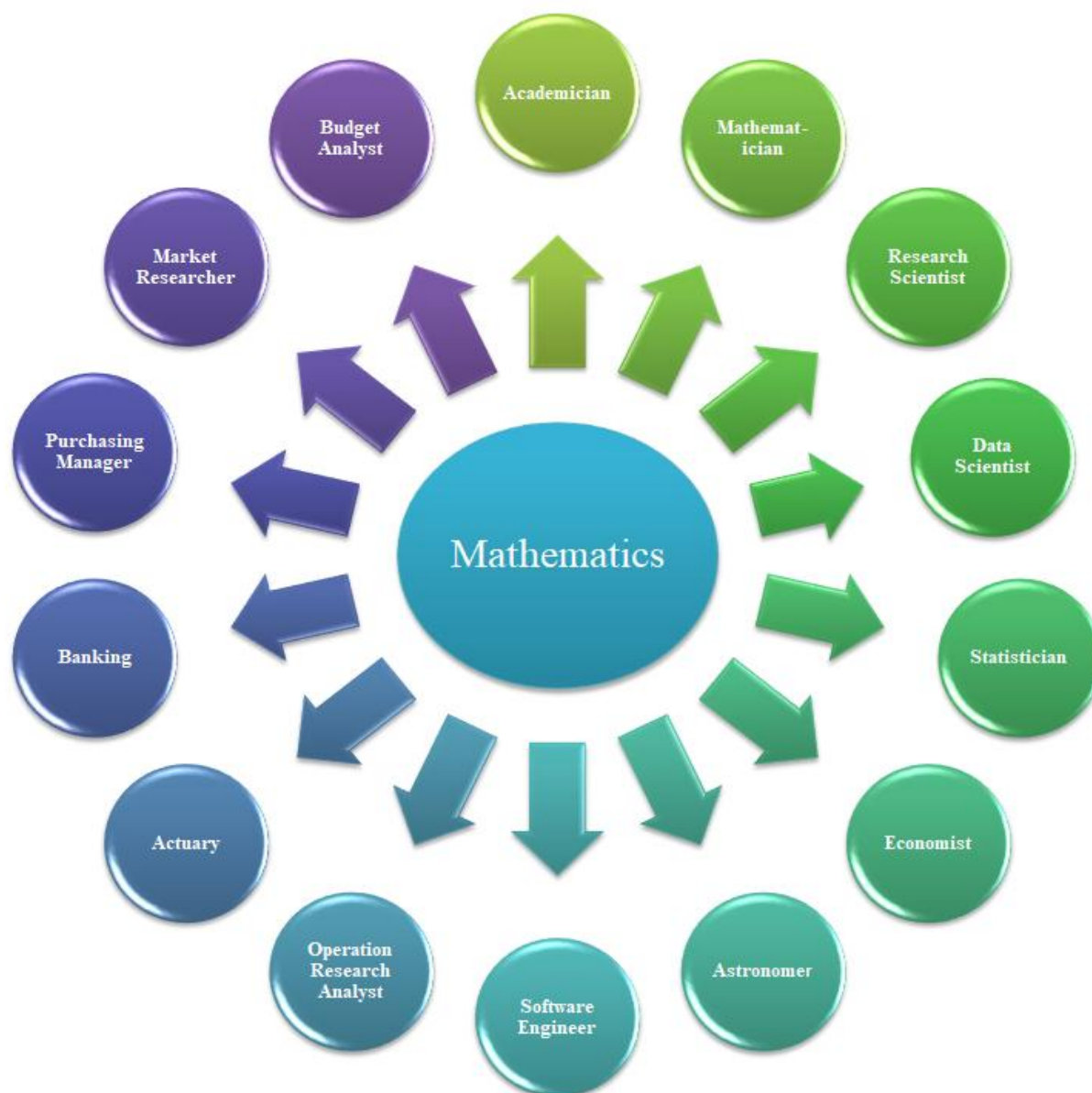


A report on Course outcomes encompassing all papers of the six semesters

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In CBCS system, students go through different courses of Mathematics. Total number of semesters is six and the time duration is exactly 6 months for each semester. Obviously, to cover the six semesters it takes total 3 years.

Here the CBCS curriculum is designed with the four types of courses:

- (I) Honours papers as **Core Courses (CC)**
- (II) General Papers as **Generic Elective (GE)**

- (III) **Ability enhancement compulsory Courses (AECC);**
- (IV) **Two more subjects - Skill Enhancement courses (SEC-A & SEC-B)**
- (V) **Two more special papers-Discipline Specific Elective subjects (DSE-A & DSE-B)**

Credit Points of the courses:

Course	Credit Point (individual paper)
CC-1, CC-2, CC-3, CC-4, CC-5, CC-6, CC-7, CC-8, CC-9, CC-10, CC-11, CC-12, CC-13, CC-14, DSE-A, DSE-B	6
GE-1, GE-2, GE-3, GE-4	6
AECC-1, AECC-2	2
SEC-A, SEC-B	2

The CBCS curriculum designed as follows:

Semester-1	CC-1, CC-2	GE-1	AECC-1
Semester-2	CC-3, CC-4	GE-2	AECC-2
Semester-3	CC-5, CC-6, CC-7	GE-3	SEC-A
Semester-4	CC-8, CC-9, CC-10	GE-4	SEC-B
Semester-5	CC-11, CC-12	DSE-A(1)	DSE-B(1)
Semester-6	CC-13, CC-14, CC-14 (Practical)	DSE-A(2)	DSE-B(2)

Semester	Total Credits
1	20
2	20
3	26
4	26
5	24
6	24

- All students have to pass all the individual semester by scoring the total required credit points for each and every individual semester. If any student is failed to score the total credits in any semester, the student will have to appear the semester again in the next year. Until and unless all semesters are cleared, the concerned student will not be passed the UG exam.

In **Sem-1** the honours papers CC1 and CC2 consist of Calculus, Geometry, Vector Analysis and Algebra which are fundamental concepts of Mathematics and base of higher

mathematics. These subjects are compulsory for the basic idea of Mathematics and useful throughout the mathematics honours curriculum.

In addition to the two core courses, one GE course (GE-1), has to be chosen by the each student. This GE-1 paper is either Physics or Chemistry or Economics or Computer Science.

Among the four GE subjects, any two GE subjects are to be chosen by each student twice. Students have to study a particular subject as GE-1 paper which is selected by the concerned student in Sem-1.

This way, students acquire knowledge of any one of an important science subject, i.e., Physics or Chemistry or Economics or Computer Science in Sem-1.

In **Sem-2**, CC-3 and CC-4 papers include the topics, Theory of Real Analysis and Group Theory which are not only the basics of real analysis and Algebra but also two important pillars of mathematics. This basic knowledge will be applied in the advanced level courses, like Advanced Algebra, Analysis etc.

In **Sem-3**, the three Core courses, namely, CC-5, CC-6 and CC-7 are taught. CC-5 includes the theory of real functions related to Real Analysis, which develop the analytical skill of the students. In CC-6, Linear Algebra-1 is taught, that is one of the important parts of Algebra and has vast application in several branches of science and technology. In CC-7, Ordinary Differential Equation (ODE) & Multivariate Calculus-I are included in the curriculum, which are advanced version of Differential Equation and Calculus.

In addition to the above mentioned courses, one more course is taught, that is, SEC-A, which offered two programming languages, namely, C Programming Language and Object oriented Programming in C++. Students have to choose any one of the programming languages. They acquire the basic knowledge of computer programming in this stage.

In **Sem-4** the four courses are taught, i.e. CC-8, CC-9, CC-10 and SEC-B. In CC-8, Riemann Integration, Improper Integral and Series of functions are studied, which are advanced level of real Analysis and have important applications in different branches of mathematics. If any student is interested to study Pure Mathematics, these courses are the basic concepts and compulsory. The course CC-9 includes one of the important branches of Mathematics, namely, Differential Equation and Partial Differential Equation, which also have vast applications in different branches of Mathematics, Pure and Applied, in post graduate level. Also, in this paper the remaining part of multivariate Calculus is taught.

Again, in the core course CC-10, one of the important subjects of mathematics i.e., Mechanics is taught, which has important applications in engineering science.

In this semester, one more mathematical course is taught, namely, Sec-B, is offered to the students, which include Mathematical Logic and scientific computing with Sage Math & R. Students are to choose any one of the courses. Both the topics are related to computer science and have vast application in different branches of Mathematics.

In **Sem5** four more advanced courses of mathematics are taught, i.e. CC-11, CC-12, DSE- A(1) and DSE- B(1). In CC-11, Probability & Statistics is studied in advanced level, which is one of the important concepts of mathematics. This subject is studied by the students of 10+2 level and is applicable for all most all areas of mathematics.

In CC-12, Group Theory-2 and Linear Algebra-2 which are continuation of the Group Theory-I and Linear Algebra-I taught in Sem-2 and Sem-3 respectively. Both the topics are important and interesting.

Also, two courses of advanced level, DSE- A(1) & DSE- B(1), are taught. DSE- A(1) consists of three subjects, Advanced Algebra, Bio Mathematics & Industrial Mathematics. Students are offered to choose any one of the above mentioned subjects.

Similarly, DSE-B(1) includes three interesting subjects, Discrete Mathematics, LPP & Game Theory and Boolean Algebra. Students have to choose any one of the three courses.

Last but not the least, in **Sem-6** four more courses of advanced level are taught. The codes of the core subjects are CC-13, CC-14, DSE-A(2), DSE-B(2). CC-13 course includes metric space which is the advanced theory of all analytical subjects. Another topic of this paper is Complex Analysis, another important branch of Mathematics and has significant applications in Mathematics.

In CC-14 paper, Numerical Methods are studied both as theory and practical by the students. For Practical, numerical lab is necessary.

The DSE-A(2) papers include advanced level of mathematics. Any one of the subjects of DSE-A(2), namely, Differential Geometry or Mathematical Modelling or Fluid Statics are opted by our students. These subjects are related to Applied Mathematics.

Similarly, in DSE-B(2) point set topology is the most advanced subject of Real Analysis. This is very important for higher studies of the students of Pure Mathematics.

The courses taught in Sem-5 & Sem-6 are very important for the competitive examinations like NET, GATE, SLET and also for the admission tests of various national level examinations for MTech, MSC, MCA and also for research in various institutes like IIT, ISSER, NIT etc.

CBCS is a balanced curriculum for the UG students of Mathematics.