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1. **INTRODUCTION**

**Introduction**

The community of Sacred Heart College, inspired by the love of the Heart of Jesus and fundamental human values, following the educative system of Don Bosco, are committed to the creation of an educated, ethical, and prosperous society where equality, freedom and fraternity reign by imparting higher education to poor and rural youth enabling them towards integral human development.

For assuring quality and excellence in higher education, the Department of Mathematics, Sacred Heart College, has taken steps to monitor the quality and progress of various systems that contribute to the academic enrichment and relevance by establishing not only the Internal Quality Assurance Cell but also through Academic Audit conducted by external experts.

In the field of Higher Education, the Staff and Students of department of Mathematics are committed to academic excellence, healthy standards in extracurricular practices, socially relevant research, courses leading to employment and entrepreneurship, and continuous progress of the institution.

The department of Mathematics work towards serving preferentially the underprivileged and rural youth, educating them to social consciousness of rights and responsibilities, rooting out social evils, building communities, and promoting total literacy, education and development of the neighborhood and aiming at integrating ethical, cultural and political values, developing a sense of the Divine present in nature and in the human person, by means of group activities and personal guidance, in a family atmosphere.

* 1. **. Members of Academic Audit Panel**
1. **Dr. M. Pitchaimani**

Assistant Professor,

Ramanujam Institute of Advanced Study in Mathematics,

University of Madras.

Cell No : 9952792396

**Email :** mpitchaimani@yahoo.com

1. **Dr. A. Solai Raju**

Associate Professor, Dept. of Mathematics

Jamal Mohamed College (Autonomous)

Tiruchirappali – 620 020

Cell No : 7871791460, 9487027011

**Email :** solairama@yahoo.co.in

1. **Mr. C. Thirugnana Sambandan**

Scientist, Aeronautical Development Agency

Ministry of Defense, Govt. of India

Bangalore – 560 017

Cell No : +91 9448584648

**Email :** sambandam@jetmail.ada.gov.in

* 1. **Schedule of the academic audit meeting**

**Date – Wednesday – 09-12-2015**

09.30 am to 10.00 am - Welcome to team members – Department

10.00 am to 10.30 am - Refreshment

10.30 am to 11.00 am - Power point Presentation – HOD

11.00 am to 11.30 am - Verification of Documents

11.30 am to 12.00 pm - Interaction with UG Students

12.00 pm to 12.30 pm - Interaction with PG Students

12.30 pm to 1.00 pm - Interaction with M.Phil and Ph.D Schloars

**1.00 pm to 2.00 pm - Lunch**

2.00 pm to 2.30 pm - Interaction with UG Shift-II Students

2.30 pm to 3.00 pm - Interaction with PG Shift-II Students

3.00 pm to 4.30 pm - Discussion with Faculty (Individual)

4.30 pm - Refreshment

5.00 pm to 5.30 pm - Discussion with Faculty (Individual)

**Date – Thursday – 10-12-2015**

09.30 am to 12.30 pm - Team discussion and Report Writing

12.30 pm to 1.30 pm - **Lunch**

1.30 pm to 3.30 pm - Finalization of report based on

1.  Curriculum – Examination – Question Paper – Research – Infrastructural facilities – Outcomes of Students, Faculty meeting.

                                                 2. Suggestions.

 3. Conclusion.

03.30 pm to 4.00 pm - Presentation of the Report

**About the Department of Mathematics**

**College**

Sacred Heart College (Autonomous), Tirupattur was founded in the year 1951 by a Spanish Salesian Missionary **Rev.Fr.Joseph Carreno SDB**. It had its humble beginning when it started functioning with 10 teachers and 81 students and in a short span of five decades, it has grown into a research institution, with the view to cater to the needs of the deserving local students. And today it has taken shape as a majestic institution, all to the credit of the Salesians of Don Bosco. The College has been re-accredited with ``A'' grade by NAAC in November 2006 and accredited by NAAC (3rd Cycle) with 3.43 on the 4 points scale at ‘A’ grade in April 2013.

**Department of Mathematics**

Sacred Heart College is an affiliated autonomous College of the newly formed Thiruvalluvar University (formerly affiliated to University of Madras). This is a Catholic Christian Minority Institution of Higher Education, established and administered by the religious Congregation of the Salesians of Don Bosco. The Salesian province of Madras under the leadership of Rev.Fr.Joseph Carreno SDB, a Spanish Salesian Missionary founded this College in the year 1951. The establishment of the Department of Mathematics was a natural corollary with the birth of this College.

Rural and backward regions in those days are rare settings in the field of Education. But Institutions of higher education are indispensable in rural areas to remove economic backwardness and intellectual non growth of the millions who belong there. Such a deprived situation challenged the faculty of Mathematics to achieve excellence in the field of higher Education.

**Inception**

From the very inception of the faculty of Mathematics, academic excellence was the order of the day. During the days of Pre-university, in a notable way, 75 of our Department students were admitted in the Engineering Colleges. The Department achieved very good results at the University Examinations. A respectable number of university rank holders from the Department of Mathematics stands as testimony for the academic excellence achieved by the Department.

**Growth**

In the year 1954, the University of Madras upgraded the College as a First Grade College and Mathematics became a full fledged degree course. The Department excelled in the university Examinations. Mathematics Department of this college proudly feel that more than 15 of our students used to enter into various courses in the prestigious Madras Institute of Technology every year, which exceeds the number from any college in Tamil Nadu. It was a witness to the entire state, that, the Department existing in a rural area, a college can reach the peak in academic excellence.

Thus, the Department of Mathematics of Sacred Heart College became a model of higher education in rural and backward regions.

In recognition of the hard work and the excellence in academic activities of the Department, the University upgraded the Department vertically to be a Post Graduate Department in the year 1980. The results of the P.G. Department of Mathematics in the University Examinations were the best. As the Department aspired for greater excellence and better service, the Department took a bold step in launching autonomy for the Department.

As the UGC and the University were impressed by the excellent academic record of the Department, autonomy was conferred to the PG Department of Mathematics from the academic year 1987-1988 and for the UG course from the year 1988-1989. Autonomy gave birth to free, creative and dynamic intellectual pursuits in the faculty of Mathematics. Through autonomy, academic doors were opened for the students of the rural area to have a taste of newer areas in the field of Mathematics like

 1. Graph Theory

 2. Automata Theory

 3. Bio Mathematics

 4. Number Theory and Cryptography

 5. Operations Research.

 6. Difference Equations

Finite Element Methods, Financial Mathematics and MATLAB Courses are offered as optional subjects. The curriculum was designed to cater to the needs of the student community in preparing them for competitive examinations and to create interest in the field of research. This naturally forced us to offer more and more application oriented subjects.

Keeping in mind the urgent need of up gradation of the faculty quality wise, a sequential programme in M.Phil was conducted by the Department during 1985-1986.

**Research Activity**

The Department motivated themselves to involve in research activities. In the process, 2 research scholars and 1 faculty member have obtained Ph.D degree during the year 2013-2015. **365** Research papers were published in several National and International Journals by the Faculties of the Department. **Three text books** have been published during the year 2013 – 2015 with ISBN Number and a special issue of Sacred Heart Journal of Science and Humanities has been released in the year 2015. **Two** National Conferences and **two** state level symposiums have been conducted and **Four** Minor projects are ongoing during the year 2013-2015.

1. **Milestones of the Department**

1951– Department of Mathematics was established

1954 – Introduction of U.G. programme

1980 – Launching of P.G. programme

1987 – Introduction of Autonomy of the P.G. programme

1988 – Introduction of Autonomy of the U.G. programme

1988 – Mathematics department was the prime cause for the birth of the Computer Science department.

1991 – Launching of Shift – II (UG Mathematics)

2000 – Launching the Research Programmes (M.Phil & Ph.D)

2004 – National Board for Higher Mathematics (NBHM) recognized our department for sending NBHM complementary book scheme.

2008 – Introduction to Autonomy to Shift – II

2009 – Co-education for Shift – I and Shift – II

2015 – Launching the department magazine OMEGA

2015 – Launching of P.G. programme (Shift – II)

**Visit of Renowned Mathematicians:**

Two eminent Mathematicians **Prof. B. S. Lalli and Grace Lalli** of the University of Sansketeen, Canada visited the Department during 1996 and spoke on the advancements in the field of Differential and Difference Equations especially on Delay Differential Equations and Neutral Delay Differential Equations.

**Prof. Victor Anandam** of Australia, a great Mathematician in the field of Functional Analysis visited the department and shared with the faculty and students of the Department about the research activities in Australian Universities.

**Dr. I. P. Staurulakis**, Professor of Mathematics, Greece, visited our college during December 1999 and spoke on Delay Differential Equations.

**Dr. Martin. J. Beckmann**, Professor of Mathematics and Economics, West Germany, visited our college on 22.01.2003 and addressed the students on the Marriage Markets-An approach assignment problem.

**Dr. John Michael Rassias**, Professor of Mathematics, National and Capodistrain University of Athens, Greece, visited our college during August 27-28, 2012 and spoke on Quadratic Functional Equations in various Generalized Normed Spaces.

**Dr. Dan Kannan**, Professor of Mathematics, University of Georgia, USA visited our college during December 10, 2012 and addressed the students on Construction of Real Numbers: Bottom-up Approach.

1. **Faculty Profile**

**Dr. MAJOR. M. RENI SAGAYARAJ M.Sc., M.Phil., D.D.E., Ph.D.,**

**HOD, Associate Professor, Department of Mathematics**

456, Saibaba Colony, Tirupattur, Vellore (Dt) - 635 601

E-mail : reni.sagaya@gmail.com, Mobile : 9486257452

D.O.B : 31.05.1958, D.O.J : 25.09.1981

Teaching Exp : 33 years Research Exp : 20 years

Area of Specialization : Stochastic Process & Operation Research

Thesis Title : A Study on Random Evolutions of Some

 Queuing Systems.

Ph. D. : June 6th, 2008

Guiding : 7 (Ph. D) + 54 (M. Phil)

Journal Publications : 32 (National) + 48 (International), 1 Books

 Visits Abroad : Jordan, Israel, Egypt, Argentina, Buenos Aires,

 New York (USA), France (Paris).

Major Projects : MRP-MAJOR-MATH-2013-5192

 (Collaboration – Thiruvalluvar University)

**Current positions:**

* Director, MCA AICTE for past seven years 2009-2016.
* Member Board of studies – Mathematics PG Thiruvalluvar University.
* Convener of M.Phil Research Scholars for inspection commission.
* Convener of approval of Mathematics PG Thiruvalluvar University.
* NCC, Major rank commissioned rank officer from 6th Nov 1990- 30 Oct 2010.

**Dr. K. RAVI** **M. Sc., M. Phil., Ph.D., D.D.E.,**

**UG HOD, Associate Professor, Department of Mathematics**

15/29-A, Santha Gowri Illam, Sakthi Nagar

Tirupattur – 635601, Vellore Dist.

E-mail : shckravi @ yahoo.co.in, Mobile : 9442315575

D.O.B : 02 - 03 - 1958, D.O.J : 01 - 10 - 1981

Teaching Exp : 35 years Research Exp : 15 years

Area of Specialization : Difference Equations, Functional Equations

Thesis Title : Oscillatory Behavior of Classes of Difference

 and Functional Equations

Ph.D. : December 2001

Guiding : 5 (Ph.D) + 60 (M.Phil) Completed : 5

Journal Publications : 55 (National) + 30 (International), 2 Books

Academic Awards and : Best Teacher Award, Minor Projects : 3

Other Honours Honory Appointment of Research Board of Advisors.

 Name is included in Contemporary who’s who,

 American Bio graphical Institute, 2002/2003

 **Mr. A. GEORGE MARIA SELVAM, M.Sc., M.Phil.,**

**Associate Professor, Department of Mathematics**

53/1, Ezhil Nagar, Tirupattur, Vellore Dist.

E-mail : agms@shctpt.edu, Mobile : 9443205006

D.O.B : 03-06-1965, D.O.J : 02-07-1987

Teaching experience : 28 years

Area of Specialization : Difference Equations

Thesis Title : A Study on Oscillatory Fractional Difference

 Equations

Ph.D. : Thesis Submitted (Aug 2014), (SLET cleared)

Guiding M.Phil : 31

Journal Publications : 5 (National) + 35 (International), 1 Books

Other Honours : Membership of Professional Bodies

**Dr. R. MURALI, M.Sc., B.Ed., M.Phil.,**

**Associate Professor, Department of Mathematics**

400/2, Sai Baba Nagar, Tirupattur - 635 601

E-mail : shcmurali@yahoo.co.in , Mobile : 9442284395

D.O.B : 05.06.1966, D.O.J : 16.08.1992

Teaching Exp : 24 years Research Exp : 14 Years

Area of Specialization : Functional Equations

Thesis Title : Stability of Functional Equations: A Fixed Point

 Approach

Ph.D. : October 2013

Guiding M.Phil : 38

Journal Publications : 10 (National) + 12 (International)

**DR. G. BRITTO ANTONY XAVIER M.Sc., M.Phil., B.Ed., Ph.D.,**

**Associate Professor, Department of Mathematics**

8/1, R.M. Srinivasan Nagar, Tirupattur, Vellore Dt. – 635 601

E-mail : brittoshc@gmail.com, Mobile : 9443205004

D.O.B : 16.08.1967, D.O.J : 15.07.1994

Teaching Exp : 20 years Research Exp : 10 years

Area of Specialization : Difference Equations

Thesis Title : Applications of the Generalized Difference

 Operator and Qualitative Properties of Solutions

 of Generalized Ricatti’s Equation

Ph.D. : 08 - 09 – 2010, Guiding : 7(Ph.D.) + 41 (M.Phil)

Journal Publications : 11 (National) + 64 (International), 3 Books

Conference presentations : 26 (National)+16(International); Invited Talk -9

Membership : 1. Indian Mathematical Society,

 2. Tamil Nadu Mathematical Society

 3. Academy of Discrete Mathematics and Applications

Minor Projects (1) : SERO, Hyderabad,

 India (MRP-4021/11, SERO, UGC)

**Mr. S.JOSEPH, M.Sc., M.Phil.,**

**Associate Professor, Department of Mathematics**

622-B, Vallalar Nager, Tirupattur, 635 601.

E-mail :sjoseph@shctpt.edu , Mobile : 7598379915

D.O.B : 06-01-1965, D.O.J : 17-12-1999

Teaching experience : 25 years

Area of Specialization : Number Theory

Publications : Articles – 2, Books – 1

Ph.D. : Doing Ph.D.

Guiding M.Phil : 25

**Mr. P. MANOHARAN, M.Sc., M.Phil.,**

**Associate Professor, Department of Mathematics**

23G, Sakthi Nagar, Tirupattur, 635601.

E-mail : manoharan@shctpt.edu , Mobile : 9443626306

D.O.B : 29-03-1966 , D.O.J : 22-12-1999

Teaching experience : 23 years

Area of Specialization : Difference Equations

Thesis Title : A Study on Qualitative Properties of

 Difference Equations in Stochastic Process

Journal Publications : 2 (National) + 6 (International), 1 Books

Conference presentations : 2 (International)

Ph.D. : Doing Ph.D (Registered Jan 2013).

Guiding M.Phil : 25

Other Honours : Membership of Professional Bodies

**Mrs. S.KALAIARASI, M.Sc., M.Phil.**

**Assistant Professor, Department of Mathematics**

179/1,Shantha Nagar, Tirupattur - 635 601

E-mail : skalaiarasi2@gmail.com, Mobile : 9944811775

D.O.B : 05.06.1974, D.O.J : 16.08.2002

Teaching Exp : 15 years 20.08.2007 (Regular)

Area of Specialization : Stochastic Process

Thesis Title : Stochastic Process

Ph.D. : Thesis Submitted

Journal Publications : 5

Conference presentations : 10 (National)+3(International)

**Mrs. A. MERCELINE ANITA, M.Sc., M.Phil.,**

**Assistant Professor, Department of Mathematics**

1/4, Koviloor Road,Tirupattur-635601

E-mail : mercelineanita@gmail.com, Mobile : 9894543368

D.O.B : 28.05.1974, D.O.J : 06.02.2008

Teaching Exp : 14 years Research Exp : 10 years

Area of Specialization : Stochastic Processes

Thesis Title : Studies on the System Reliability and Evolutions

 of Some its Applications in Medicine

Ph.D. : Thesis Submitted, (SLET cleared)

Guiding M.Phil : 14

Journal Publications : 10 (International)

Conference Presentations : 10 (National)+3(International)

Minor Projects : 1

**Dr. V. BALAJI M.Sc., B.Ed., M.Phil., Ph.D.**

**Assistant Professor, Department of Mathematics**

Plot No. 16, Albert Enclave, Periyar Nagar,

4th Street, Madipakkam, Chennai –600 091.

E-mail : pulibala70@gmail.com, Mobile : 9940833901

D.O.B : 18.06.1970, D.O.J : 18.06.2012

Teaching Exp : 12 years Research Exp : 8 years

Area of Specialization : Graph Theory

Thesis Title : Labeling in Graphs – A Study

Ph.D. : August 2011

Conference presentations : 3 (National)+2 (International)

Guiding : 2 (Ph.D) + 3 (M.Phil)

Journal Publications : 12 (National) + 6 (International), 3 Books

Minor Projects : 1 (No. F MRP 5766 / 15 (SERO / UGC))

**Mr. M.ANTONY AROCKIASAMY, M.Sc., M.Phil., (Ph.D.),**

**Assistant Professor, Department of Mathematics**

No.602/1C, Thiruvalluvar Street, Thillai Nagar,

(Pachal Panchayat), Tirupattur, Vellore (Dt.) - 635601,

E-mail : arockiaanto2008@gmail.com, Mobile : 9092453325

D.O.B : 13/06/1974, D.O.J : 20/06/2013

Teaching Exp : 11 years Research Exp : 7 years

Area of Specialization : Graph Theory

Thesis Title : Different Labeling of Various Types of Staircase Graphs.

Ph.D. : Thesis Submitted, (SET cleared)

Journal Publications : 4 (National) + 12 (International), 1 Books

Minor Projects : A Study on Aztech Diamond Graph and

 Diamond Staircase Graphs in Relation to

 Labeling of Graphs (MRP-5873/15(SERO/UGC))

**Mr. S.U. VASANTHA KUMAR M.Sc., M.Phil., (P.hD)**

**Assistant Professor, Department of Mathematics**

29, Alangayam road, Tirupattur, Mobile : 9994070511

E-mail : suvasanth.kumar@gmail.com

D.O.B : 04.07.1986, D.O.J : 02.06.2011

Teaching Exp : 7 years Research Exp : 3 years

Area of Specialization : Difference Equations Queueing Systems.

Journal Publications : 3 (National) + 4 (International)

**Mrs. S. SAVITHA M.Sc., M.Phil., (P.hD)**

**Assistant Professor, Department of Mathematics**

57, Narasinga Rao Colony, Tirupattur

E-mail : sadeev2005@yahoo.co.in Mobile : 9043365338

D.O.B : 02.08.1986, D.O.J : 09.11.2011

Teaching Exp : 4 years

Area of Specialization : Functional equations, cryptography.

**Mr. B.GOVINDAN M.Sc., M.Phil., B.Ed(P.hD)**

**Assistant Professor, Department of Mathematics**

93/Vth Ward, Ezhil Nagar, Tirupattur.

E-mail : govind.viveka@gmail.com Mobile : 9840466061

D.O.B : 16.04.1987, D.O.J : 16.11.2011

Teaching Exp : 4 years Research Exp : 2years

Area of Specialization : Difference Equations

Journal Publications : 7 (National) + 4 (International)

**Mr. B. CHANDRASEKAR MSc., MPhil., B.Ed.,**

**Assistant Professor, Department of Mathematics**

Melachamangalam(Village), Achamangalam(Post),

Pudupattai(VIA), Tirupattur(TK), Vellore(DT) – 635 651.

E-mail : chandru.051981@gmail.com ,

Mobile : 9965302011

D.O.B : 10/05/1980, D.O.J : 18/06/2015

Teaching Exp : 10 years Research Exp : 6 years

Area of Specialization : Stochastic Process and Queueing Theory

Journal Publications : 8 (National) + 8 (International)

**Mrs. M. PALLAVI M.Sc., M. Phil.,**

**Assistant Professor, Department of Mathematics**

15/8, Thanjai Amman Koil Street, Tirupattur

E-mail : pallavi@shctpt.edu, Mobile : 9787463312

D.O.B : 17.06.1981, D.O.J : 26.11.2012

Teaching Exp : 7 years

**Fr. S. JOHN BORG, Sdb M.Sc.,**

**Assistant Professor, Department of Mathematics**

Sacred Heart College, Tirupattur

E-mail : sjborg@gmail.com, Mobile : 9787132146

D.O.B : 13.12.1980, D.O.J : 16.06.2015

Teaching Exp : 2 years

Area of Specialization : Difference Equations

Journal Publications : 2

Conference Presentations : 2 (National)+3 (International), Invited Talk - 1

**Ms. A . ANITHA M.Sc., M. Phil.,**

**Assistant Professor, Department of Mathematics**

10, Nathai Susai Street, Udayendiram,

Vaniyambadi, Vellore DT., 635754

E-mail : anitha.mary64@gmail.com Mobile : 8870883370

D.O.B : 24.09.1990, D.O.J : 01.09.2015

**Ms. C. MONICA, M.Sc.,**

**Assistant Professor, Department of Mathematics**

30/43, K. A. Koil Street, Kanchipuram - 631501

E-mail : monicariasm@yahoo.com, Mobile : 9994175547

D.O.B : 27.05.1989, D.O.J : 14.09.2015

Research Exp : 4 years

Area of Specialization : Delay Differential Equations Thesis Title

Thesis Title : Qualitative Analysis of Delay Differential

 Equation Models for HIV Infection

Ph.D. : Thesis Submitted

Journal Publications : 7 (International)

1. **Students Profile**

 **2015 – 2016 (Shift - I)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Courses** | **SC****&****ST** | **MBC** | **BC** | **OC** | **Total** | **Grand****Total** |
| **BC** | **RC** | **MUS** |
| **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** |  |
| I B.Sc | 4 | 6 | 20 | 22 | 7 | 14 | 2 | 4 | 1 | 0 | 0 | 0 | 34 | 46 | 80 |
| II B.Sc | 4 | 9 | 12 | 28 | 7 | 11 | 3 | 0 | 2 | 1 | 0 | 0 | 28 | 49 | 77 |
| III B.Sc | 3 | 9 | 8 | 22 | 7 | 12 | 3 | 0 | 1 | 2 | 0 | 1 | 17 | 53 | 70 |
| I M.Sc | 4 | 6 | 3 | 10 | 6 | 9 | 2 | 2 | 0 | 0 | 1 | 1 | 16 | 28 | 44 |
| II M.Sc | 5 | 5 | 3 | 9 | 6 | 9 | 3 | 2 | 0 | 0 | 2 | 0 | 19 | 25 | 44 |
|  **Total** | **114** | **201** | **315** |

**Total number of Staff: 9 (M) + 2 (F) = 11**

**2015 – 2016 (Shift - II)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Courses** | **SC****&****ST** | **MBC** | **BC** | **OC** | **Total** | **Grand Total** |
| **BC** | **RC** | **MUS** |
| **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** | **M** | **W** |
| I B.Sc | 4 | 6 | 20 | 22 | 7 | 14 | 1 | 2 | 1 | 3 | 0 | 0 | 33 | 47 | 80 |
| II B.Sc | 5 | 9 | 13 | 28 | 7 | 11 | 3 | 0 | 0 | 1 | 0 | 0 | 28 | 49 | 77 |
| III B.Sc | 3 | 9 | 8 | 22 | 7 | 12 | 3 | 0 | 1 | 2 | 0 | 1 | 17 | 53 | 70 |
| I M.Sc | 4 | 5 | 3 | 10 | 3 | 9 | 0 | 2 | 1 | 1 | 1 | 1 | 12 | 28 | 40 |
| M.Phil | 2 | 2 | 5 | 2 | 1 | 8 | 0 | 2 | 0 | 0 | 1 | 2 | 9 | 16 | 25 |
| Ph.D | 1 | 0 | 7 | 0 | 6 | 1 | 5 | 2 | 0 | 1 | 0 | 0 | 19 | 4 | 23 |
|  **Total** | **118** | **197** | **315** |

**Total number of Staff: 4 (M) + 4 (F) = 8**

**5. Curriculum**

**5.1 CBCS Structure – Department of Mathematics**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part** | **Sem 1** | **Sem 2** | **Sem 3** | **Sem 4** | **Sem 5** | **Sem 6** | **T.Hrs** | **Cre** |
| I | T(6)3c | T(6)3c | T(6)3c | T(6)3c | - | - | 24 | 12 |
| II | E(6)3c | E(6)3c | E(6)3c | E(6)3c | - | - | 24 | 12 |
| III | MC(9)8c | MC(9) 8c | MC(9)8c | MC(9)8c | MC(26)22c | MC(26)22c | 108 | 96 |
| AR(5)5c | AR(5)5c | AR(5)5c | AR(5)5c |  |  |
| IV | FC(2)2c | FC(2)2c | FC(2)2c | FC(2)2c | NME(2)2c | NME(2)2c | 24 | 20 |
| EVS(2)1c | EVS(2)1c | HR(2)1c | ET/RE(2)1c | FC(2)2c | FC(2)2c |
| V | ORA | ORA  | CCA 1c | CCA 1c |  |  | - | 2 |
| **T.hrs****Cre** | 30 (22c) | 30 (22c) | 30 (23c) | 30 (23c) | 30 (26c) | 30 (26c) | 180 | 142 |
| **PG** | MC(24)19cME(6)4c | MC(24)16cME(4)4cHR(2)2c | MC(24)19cME(6)4c | MC(18)13cME(6)4cProjt (6)5c | - | - | 120 | 90 |
| **M.Phil** |  MC(120) - 2 papers; 1 - Guide Paper ; 1- Project |

**5.2.1 UG Curriculum**

**UG Degree Courses (CBCS) - B.Sc. Mathematics**

**For the candidates admitted from 2013-2014**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sem** | **Sub.** | **Title of the Paper** |  **Hrs / Week** | **Credit** | **Max Marks** |
| **CIA** | **Sem** | **Total** |
| **I** | M112 | Algebra and Trignometry  | 4 | 4 | 25 | 75 | 100 |
| M113 | Calculus | 5 | 4 | 25 | 75 | 100 |
| **II** | M210 | Differential Equation  | 5 | 4 | 25 | 75 | 100 |
| M211 | Vector Analysis | 4 | 4 | 25 | 75 | 100 |
| **III** | M311 | Statics  | 5 | 4 | 25 | 75 | 100 |
| M312 | Analytical Geometry of 3- Dimensions | 4 | 4 | 25 | 75 | 100 |
| **IV** | M411 | Dynamics | 5 | 4 | 25 | 75 | 100 |
| M412 | Numerical Methods | 4 | 4 | 25 | 75 | 100 |
| **V** | M529 | Algebraic Structures | 5 | 5 | 25 | 75 | 100 |
| M530 | Real Analysis - I | 5 | 4 | 25 | 75 | 100 |
| M531 | Complex Analysis | 6 | 5 | 25 | 75 | 100 |
| M532 | Mathematical Statistics | 5 | 4 | 25 | 75 | 100 |
| M533AM533BM533C | Elective – I1.Mathematical Aptitude2. C language, Theory & Practical3.Graph Theory | 5 | 4 | 25 | 75 | 100 |
| **VI** | M631 | Linear Algebra | 5 | 5 | 25 | 75 | 100 |
| M632 | Real Analysis – II | 6 | 4 | 25 | 75 | 100 |
| M633 | Advanced Statistics | 5 | 4 | 25 | 75 | 100 |
| M634 | Operations Research | 5 | 4 | 25 | 75 | 100 |
| M635AM635B M635C | Elective – II1. Difference Equations2.Scilab, Theory and Practical3.Combinatorial Theory | 5 | 4 | 25 | 75 | 100 |

**UG Allied Subjects (CBCS) - Mathematics**

**For the candidates admitted from 2013-2014**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sem** | **Code** | **Subject / Class** | **Title of the Paper** |  **Hrs/****Week** | **Credit** | **Max Marks** |
| **CIA** | **Sem**  | **Tot** |
| **I** | AM112A | Allied / Phy, Che | Allied Mathematics – I | 5 | 5 | 25 | 75 | 100 |
| AM112D | Allied/CS | Allied Mathematics – I(For comp. sci) | 5 | 5 | 25 | 75 | 100 |
| AM112B | Allied / B.B.A | Allied Business Mathematics  | 5 | 5 | 25 | 75 | 100 |
| AM112C | Allied / BCA | Allied Mathematical Foundations – I | 5 | 5 | 25 | 75 | 100 |
| **II** | AM212A | Allied / Phy, Che | Allied Mathematics - II | 5 | 5 | 25 | 75 | 100 |
| AM212D | Allied/CS | Allied Mathematics – I(For comp. sci) | 5 | 5 | 25 | 75 | 100 |
| AM212B | Allied / B.B.A | Allied Business Statistics | 5 | 5 | 25 | 75 | 100 |
| AM212C | Allied / BCA | Allied Mathematical Foundations – II | 5 | 5 | 25 | 75 | 100 |
| **III** | AM306 | Allied / B.Com | Allied Business Mathematics | 5 |  5 | 25 | 75 | 100 |
| AM307 | Allied / B.Sc Bio – Che | Allied Bio-Statistics – I | 5 | 5 | 25 | 75 | 100 |
| **IV** | AM406 | Allied / B.Com | Allied Business Statistics | 5 | 5 | 25 | 75 | 100 |
| AM407 | Allied / Bio – Che | Allied Bio-Statistics – II | 5 | 5 | 25 | 75 | 100 |
| **V** | NMA502 | Non-MajorElective | Elective – I: Mathematics for Competitive Examinations | 2 | 2 | 25 | 75 | 100 |
| **VI** | NMA602 | Non-MajorElective | Elective – II: Basic Mathematics | 2 | 2 | 25 | 75 | 100 |

**5.2.1 PG Curriculum**

**PG Degree Courses (CBCS) – M.Sc. Mathematics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sem** | **Sub.** | **Title of the Paper** | **Hrs/W**  | **Cre** | **Max Marks** |
| **CIA** | **Sem** | **Total** |
|  **I** | M735 | Abstract Algebra | 6 | 5 | 25 | 75 | 100 |
| M736 | Real Analysis | 6 | 5 | 25 | 75 | 100 |
| M737 | Complex analysis | 6 | 5 | 25 | 75 | 100 |
| M738 | Ordinary Differential Eqns | 6 | 4 | 25 | 75 | 100 |
| M739AM739BM739C | Elective - I1.Differential Geometry2. Fuzzy sets and Fuzzy Logic.3. C++ and Numerical Analy. | 6 | 4 | 25 | 75 | 100 |
|  **II**  | M835 | Linear Algebra | 6 | 4 | 25 | 75 | 100 |
| M836 | Advanced Analysis | 6 | 4 | 25 | 75 | 100 |
| M837 | Classical Mechanics | 6 | 4 | 25 | 75 | 100 |
| M838 | Partial Differential Equations | 6 | 4 | 25 | 75 | 100 |
| VE203 | Human Rights | 2 | 2 | 25 | 75 | 100 |
| M839AM839BM839C | Elective - II1. Difference Equations2. Cal. of Variations Int. Eqns 3. Mathematical Modelling | 4 | 4 | 25 | 75 | 100 |
| **III** | M941 | Mathematical Statistics | 6 | 5 | 25 | 75 | 100 |
| M942 | Topology | 6 | 5 | 25 | 75 | 100 |
| M943 | Number Theory and Cryptography | 6 | 4 | 25 | 75 | 100 |
| M944 | Measure and Integration | 6 | 5 | 25 | 75 | 100 |
| M945AM945BM945C | Elective - III1. Graph Theory2. Discrete Mathematics3. Mat Lab | 6 | 4 | 25 | 75 | 100 |
| **IV** | M1038 | Functional Analysis  | 6 | 5 | 25 | 75 | 100 |
| M1039 | Operation Research | 6 | 4 | 25 | 75 | 100 |
| M1040 | Stochastic Processes | 6 | 4 | 25 | 75 | 100 |
| M10423 | Project | 6 | 5 | - | - | 100 |
| M1041AM1041BM1041C | Elective – IV1.Finite Element Method2. Fluid Dynamics3. Formal Languages and Automata | 6 | 4 | 25 | 75 | 100 |

**PG Allied Subjects (CBCS) - Mathematics**

**For the candidates admitted from 2013-2014**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sem** | **Subject** | **Title of the Paper** | **Hrs/Week** | **Credit** | **Max Marks** |
| **CIA** | **Exam** | **Total** |
| **I** | AlliedM.Com | Advanced Business Statistics | 6 | 4 | 25 | 75 | 100 |
| AlliedMBA | Advanced Business Statistics for Management | 6 | 4 | 25 | 75 | 100 |
| AlliedM.Sc CS | Mathematical Foundations | 5 | 4 | 25 | 75 | 100 |
| **II** | AlliedM.com | Quantitative techniques for Business decisions | 6 | 4 | 25 | 75 | 100 |
| AlliedMBA | Applied operations research for management | 6 | 4 | 25 | 75 | 100 |

1. **Evaluation of the Courses**
	1. **Evaluation Pattern**

There shall be two components for all the papers, namely Continuous Assessment (CA) and end Semester examinations. Total marks for each paper shall be as follows:

Continuous Assessment – 25 marks

End Semester examination – 75 marks

**End Semester Examination**

The component of CA and the distribution of marks shall be as follows:

* There shall be two tests for 75 marks each and the average marks will

 be converted to 15 marks. If any student is absent for valid reason

 during the test a retest in CA may be conducted in consultation with

 the course teachers.

* There shall be one problem solving session which carries 5 marks.
* The third component of CA is mark for attendance which carries 5

 marks.

**6.2 QUESTION PAPER PATTERN**

**6.2.1 Semester Examination**

 The question paper shall have three sections with the maximum of 75 marks for three hours with the following break-up.

**Section-A**

Section-A shall contain 10 short answer questions without choice drawn from all the units on the basis of two from each unit.

Each question shall carry two marks. (10 x 2=20)

**Section-B**

 Section-B shall contain 5 either or questions drawn from all the five units. (one either or question from each unit). Each question shall carry 5 marks.

(5 x 5=25)

**Section-C**

 Section-C shall contain 5 questions drawn one each from the 5 units. 3 questions out of 5 are to be answered. Each question shall carry ten marks.

 (3 x 10=30)

**6.2.2 CA Examination**

The duration of the examination shall be two hours.

The question paper shall consist of three parts.

**Section-A:** Short Answers (7 x 3=21 marks)

**Section-B:** Medium Answers (with either or choice, 3 x 8=24 marks)

**Section-C:** Long Answers (2 out of 3, 2 x 15=30 marks)

**The break-up of the internal marks component for UG is as follows:**

Test - 15 marks

 Attendance - 5 marks

 Problem solving - 5 marks

**The break-up of the internal marks component for PG is as follows:**

Test - 15 marks

 Problem solving - 5 marks

 Seminar - 5 marks

**6.2.3 For Mathematical Aptitude papers**

There will be 100 objective type questions; each question carries 0.75 marks.

**6.2.4 For SCILAB& C-Programming Practicals**

CA - 40 marks

End Semester Examination - 60 marks

Total - 100 marks

**6.2.5 Components of Semester Examination**

Practicals - 50 marks

Record - 10 marks

Total - 60 marks

**6.3 .1 Passing Minimum for UG:**

A candidate shall be declared to have passed the examination in all the papers if he/she obtains 40 percent of the maximum marks in the semester examination and 40 percent of both CA and end semester examination put together. There is no passing minimum in the CA.

**6.3.2 Passing Minimum for UG:**

 A candidate shall be declared to have passed the examination in all the papers if he/she obtains 50 percent of the maximum marks in the semester examination and 50 percent of both CA and semester examination put together. There is no passing minimum in the CA

**6.4 Result Analysis**

**Results For APRIL 2015 Semester Examinations (Shift - I)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CourseAppeared | Paper Code | Merit(>80%) | 1st Class(60-80)% | 2nd Class | Failed /% of failure | Total  |
| I B.Sc | AP203 | 12 | 31 | 29 | 3 | 75 |
| M210 | 4 | 26 | 27 | 18 | 75 |
| M211 | 7 | 27 | 29 | 12 | 75 |
| II B.Sc | ACH407 | 6 | 26 | 35 | 3 | 70 |
| M411 | 16 | 29 | 19 | 5 | 69 |
| M412 | 34 | 23 | 13 | 0 | 70 |
| III B.Sc | M624 | 19 | 29 | 18 | 2 | 68 |
| M625 | 21 | 27 | 17 | 3 | 68 |
| M626 | 29 | 24 | 24 | 1 | 68 |
| M627 | 13 | 28 | 21 | 6 | 68 |
| M628 | 25 | 23 | 17 | 3 | 68 |
| I M.Sc | M835 | 5 | 25 | 9 | 5 | 44 |
| M836 | 12 | 25 | 5 | 2 | 44 |
| M837 | 23 | 18 | 3 | 0 | 44 |
| M838 | 32 | 8 | 3 | 1 | 44 |
| M839A | 7 | 21 | 6 | 10 | 44 |
| II M.Sc | M1038 | 8 | 15 | 11 | 7 | 41 |
| M1039 | 30 | 9 | 2 | 0 | 41 |
| M1040 | 17 | 16 | 6 | 2 | 41 |
| M1041B | 21 | 17 | 2 | 1 | 41 |
| M1042J | 37 | 4 | 0 | 0 | 41 |

**Results For APRIL 2015 Semester Examinations (Shift - II)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name of the CourseAppeared | Paper Code | Merit(>75%) | 1st Class(60-75)% | 2nd Class | Failed /% of failure | Total  |
| I B.Sc | AP203 | 9 | 24 | 34 | 10 | 77 |
| M210 | 36 | 13 | 22 | 6 | 77 |
| M211 | 36 | 13 | 16 | 12 | 77 |
| II B.Sc | ACH407 | 2 | 5 | 52 | 8 | 67 |
| M411 | 19 | 17 | 19 | 12 | 67 |
| M412 | 31 | 15 | 18 | 3 | 67 |
| III B.Sc | M624 | 35 | 20 | 9 | 0 | 67 |
| M625 | 17 | 20 | 24 | 5 | 67 |
| M626 | 33 | 20 | 9 | 4 | 67 |
| M627 | 19 | 31 | 14 | 2 | 67 |
| M628 | 33 | 19 | 12 | 2 | 67 |

1. **Research and Consultancy**

**Major/Minor Research Projects Grants received details :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Faculty Name** | **Title of the Project/ File. No** | **Funding Agency/****Duration** | **Vide File No** | **Amount Sanctioned** |
| Dr. G. Britto Antony Xavier | Global Behaviour of Generalizedα-Difference operators and Equations with Applications in Number Theory, Graph Theory and Computer Science. | UGC Minor ResearchAug 2012 – Aug 2014 | MRP-4021/11(SERO-UGC), Link No. 4021, Dated Aug 2012. | **Rs.85,000**/On going |
| Mrs.A.Merceline Antia  | Human Pathology-Medical Problem Designed Using Reliability Techonology  | UGC Minor Research2014-2016 | No. F MRP 5210 / 14 (SERO / UGC) | **Rs.2,70,000/**On going |
| Dr.V.Balaji | Application of Graph Labeling (Skolem Mean Labelin G) in Communication Networks | UGC Minor Research2015-2017 | No. F MRP 5766 / 15 (SERO / UGC) | **Rs.1,60,000/-**On going |
| Mr. M. Antony Arockiasamy | A Study on Aztech Diamond Graphs and Diamond StaircAse Graphs with Reference to Graph Labeling | UGC Minor Research2015-2017 | No. F MRP 5873 / 15 (SERO / UGC) | **Rs.1,60,000/-**On going |

**Ph.D Guides - 4 Ph.D Awarded - 3 Ph.D Pursuing - 23**

**Areas of Research :** Stochastic Process, Functional Equations, Difference

 Equations, Operations Research, Graph Theory, Numerical Methods

**Publications:**

 Number of papers published in peer reviewed journals (I/N) - 365

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Name of the Faculty** | **Paper Published** | **Paper** **Presented** |
| **N** | **I** | **N** | **I** |
| 1. | Dr.M.Reni Sagayaraj | 32 | 48 | 15 | 9 |
| 2. | Dr.K.Ravi | 55 | 30 | 16 | 6 |
| 3. | Mr.A.George Maria Selvam | - | 26 | 6 | 3 |
| 4. | Mr.R.Murali | 10 | 12 | 7 | 4 |
| 5. | Dr.G.Britto Antony Xavier | 11 | 64 | 7 | 13 |
| 6. | Mr.P.Manoharan | - | 4 | 1 | 1 |
| 7. | Mrs.S.Kalaiarasi | - | 5 | 3 | 1 |
| 8. | Mrs.A.Merceline Anita | - | 10 | 5 | 2 |
| 9. | Dr.V.Balaji | 12 | 6 | 6 | 2 |
| 10. | Mr.A.Antony Arockiasamy | 4 | 12 | 3 | 2 |
| 11. | Mr.S.U.Vasantha Kumar | 3 | 4 | 3 | 1 |
| 12.  | Mr.B.Govindan | 2 | 3 | 1 | 1 |
| 13. | Mr.B.Chandrasekar | - | 3 | 1 | 1 |
| 14. | Rev.Fr.S.John Borg | - | 2 | 1 | 1 |
| 15. | Ms.C.Monica | - | 7 | 2 | 3 |
|  | **Total** | **129** | **236** | **77** | **50** |

1. **Infrastructure**

|  |  |
| --- | --- |
|  1. **Infrastructural facilities** (Special instruments, if any indicate users and usage incidences) | a) LCD - 4, Smart Board – 2, Laptop – 5b) Computers – 10 c) Class Room – 10d) Staff Room – 10 cabins  e) Study Room – 1 |
| 2. **Whether the space is fully utilized or not?** | Yes (Shift I and Shift II) |
| 3. **Deficiencies/Problems, if any**  | 1. No sufficient space for 77 students sitting comfortably 2. No Internet facility after 6pm in working days and no connection on holidays for doing research |
| 4. **Library (in the central Library)** |  |
| i) No. of books | a) Indian – 245 b) Foreign - 100  c) Total – 345 |
| ii) No. of Periodicals/Journals subscribed (enclose list)  | a) Indian – 7 b) Foreign - 10 c) Total – 17 |
| iii) Amount spent during the last 2 years on Books/ Periodicals/Journals | 2013 -14 | 2014 -15 |
| Books | Rs. 56,918.00 | Rs. 28,971.00 |
| Others /Journals | Rs. 29,330.00 | Rs. 23,390.00 |
| Total  | Rs. 86,248.00 | Rs.52,361.00 |
| iv) Other facility provided to the students  | Cybrary, Wi-fi, Internet, Intranet  |

1. **Outcome of the Students meeting**
* Students expect to teach the applications oriented subject knowledge.
* Staff can impose the students to get the textbooks.
* Department can encourage the students to speak English.
* Students want to engage each of them in Extra-Curricular activities.
* Weaken Students can be taken care in academic and counseling.
* Teachers can focus on the explaining the essence of the subject and have the interaction with students.
* The Teachers should avoid usage of OHP/LCD.
* Few sections of each unit can be allotted for seminar.
* Follow up of the Students Guidance Programme can be strengthened in order to build up the cordial relationship and to give parental care.
* If there is reasonable difference between first valuation and revaluation, then the amount which collected from Students should be refunded.
1. **Outcome of the Faculty meeting**
* The Students are asked to access the Library but only few students take it up seriously.
* The Staff Members are advising all the Students must purchase at least the core textbooks.
* A single application form can have the different subject course option to get the admission in the college.
* Drinking water Facility should be provided in the Department.
* There is an Insufficient Space and Infrastructure in the Class Rooms and no Wi-Fi Connection in the evenings in our Department.
1. **Overall Assessment**
* Department research contribution is commendable and the further interaction with DST and other Government Organisation will augment the Department growth.
* Department can have MOU with other Higher Research Education Institutes to collaborate the research activities.
* Overall Staff Profile shows a great growth of their Individual research interacts.
* Research paper publication in reputed International journals and various disciplines are very encouraging.
* Professors can interact with other Departments faculty members for inter disciplinary research work.
* Outcome of the Students results are good.
* All are satisfied with the question paper pattern and evaluation system.
* Research Scholars are comfortable in the research programme.
1. **Suggestions**
* The essence of the Subject knowledge might be reached for the Students.
* Personal copy of Textbooks will help students for their higher education and in their Career.
* Students realized that they are not able to communicate properly and the panel requests the Professors to talk in English.
* Library usage and Newspaper reading should be motivated among the Students.
* Quite number of Students can be encouraged to join in Social activities like NCC, NSS etc.
* Programmes should be arranged by inviting many resource persons from different sectors so that the students could make the best use of it for their growth and development.
* Re-Structure of the Curriculum is needed. The re-structure as follows

Number Theory – I Sem, Toplogy – II Sem, Complex Analysis – III Sem and Differential Geometry must be a core paper in the IV Sem and also anyone of the Stochastic Process or Operational Research made elective paper.

1. **Conclusion**

TheAcademic Audit committee is happy about the various activities carried out in the Department. The implementation of the suggestions will enhance the Department to get Quality Education.

1. **Signature of the Academic Panel Members**

Dr. **M.Pitchaimani**

Assistant Professor, :

RIASM, University of Madras.

**Dr.A.Solai Raju**

Associate Professor, Dept. of Mathematics

Jamal Mohamed College (Autonomous) :

Tiruchirappali – 620 020

**Mr.C.Thirugnana Sambandan**

Scientist, Aeronautical Development Agency :

Ministry of Defense, Govt. of India

Bangalore – 560 017