

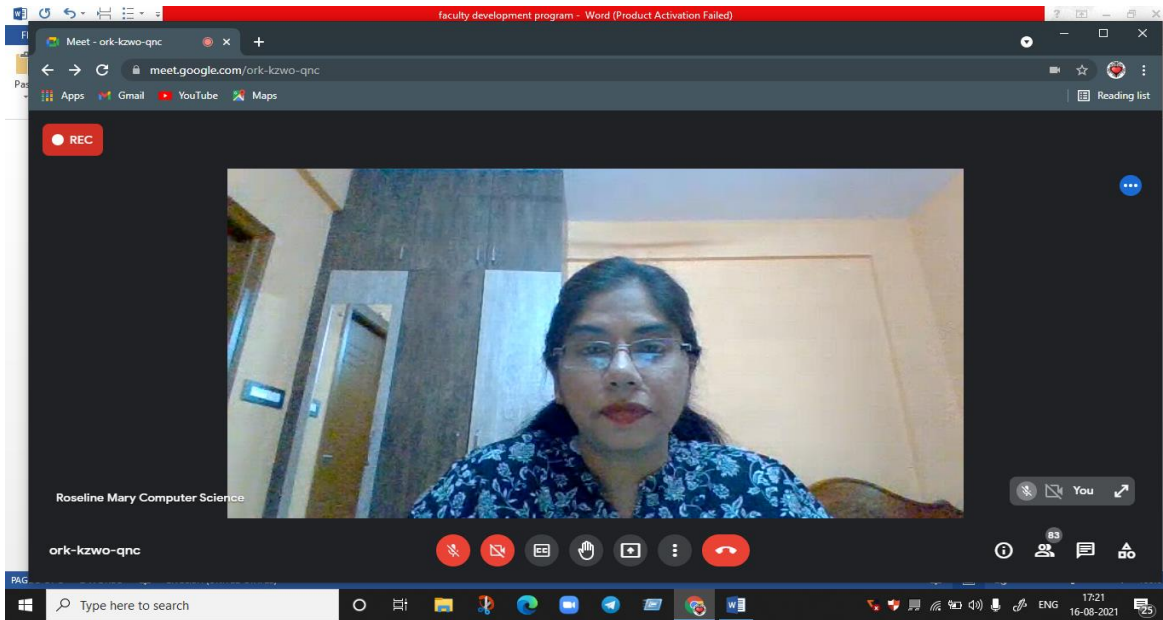


HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-620002
PG & RESEARCH DEPARTMENT OF MATHEMATICS
MATHEMATICS ASSOCIATION REPORT (2021-2022)

The inaugural meeting was held on 15th July 2021 for electing the office bearers of the Mathematics Association for the academic year 2021-2022. The PG and Research Department of Mathematics, Holy Cross College (Autonomous), Tiruchirappalli, organized and conducted a five day Virtual International Faculty Development Programme from 16th August to 20th August 2021, on the topic “**New Epoch in Software Learning**”.

On the first day 16th August 2021, the programme commenced virtually at 5.00 p.m. by seeking God's blessings through prayer, **Dr. W. Ritha**, Head and Assistant Professor, PG and Research Department of Mathematics, Holy Cross College (Autonomous), Trichy, welcomed the gathering and the resource person of the day.

The key speaker **Ms. R. Roseline Mary**, Assistant Professor, Department of Computer Science, CHRIST Deemed to be University, Bangalore, Karnataka spoke on the topic “**R for Data Science**”. She explained the importance of the data and its type. She elucidated about the tutorial of R language, its packages, and installation of R language. Participants discussed various aspects with the resource person.



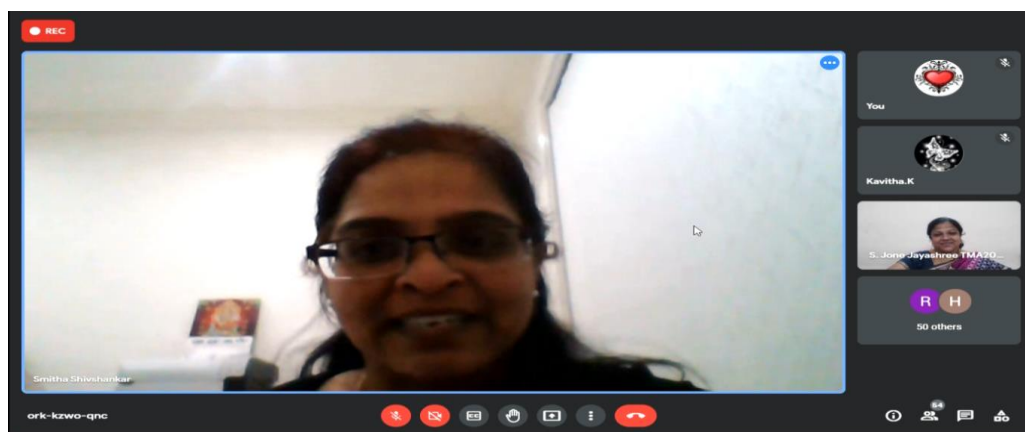
The second day session began at 5.00 p.m. on 17th August 2021. **Dr. Parmod Kumar**, Associate Professor, Hunan University of Humanities, Science and Technology, Hunan, China, delivered a lecture on the topic “**MATLAB Programming for Scientific Computing**”. He gave a detailed talk about the theoretical model of the solar system and about the mathematical modeling like parametric modeling, black-box and first principles with MATLAB.



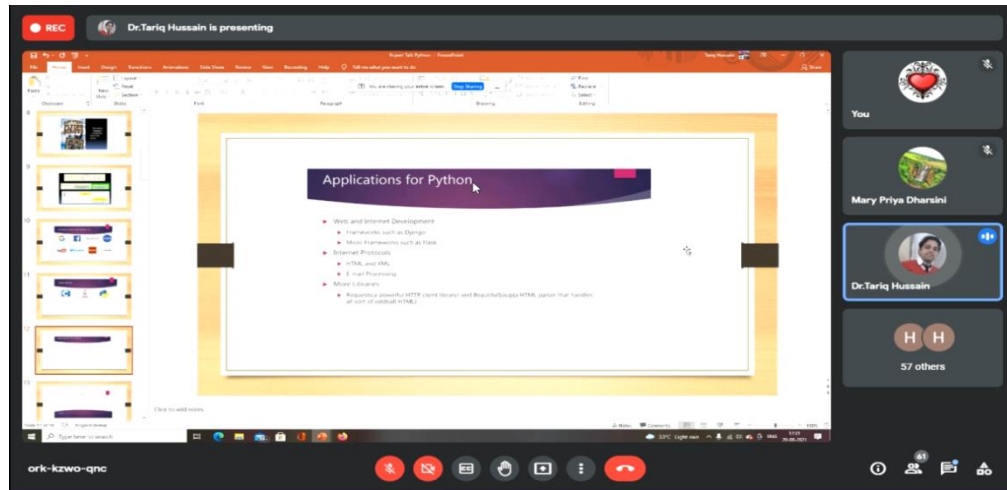
On 18th August, 2021 the day three session began with the welcome address. **Dr. A. Saleem Raja**, Lecturer, Information Technology Department, University of Technology and Applied Sciences – Shinas, Sultanate of Oman enlightened the participants on the topic “**Basics of Machine Learning and its Applications**” in which he gave the highlights of supervised and unsupervised learning that kept audience spellbound.



The fourth day session commenced on 19th August, 2021. **Dr. Smitha Shivshankar**, Senior Lecturer, Information Technology and member of Academic Board, King’s Own Institute, Sydney, Australia handled the session on the topic “**AI Tools in Teaching and Learning**”. She started her session with a brief introduction of Artificial Intelligence (AI).



The fifth day session commenced on 20th August, 2021. **Dr. Tariq Hussain Sheikh**, Lecturer in Computer Science and Applications, Government Degree College, Poonch, Jammu & Kashmir (UT) handled the session on the topic **“Python its Applications- a case study”**. He elucidated a case study of Python Programming Language on the topic **“A Novel Long Range IOT Based Automatic Dispenser System for Heavy Water Line Flow Control”** for which Australian Patent Office has approved Innovation Patent.





The Institution’s Innovation Council of PG & Research Department of Mathematics organized a webinar titled **“Design Thinking for Innovation”**, on 21st August 2021. The resource person **Dr. Sarika Lohana**, Life Coach, NLP Practitioner & Trainer at Scoopin, Bangalore highlighted the top 10 skills on design thinking and human thinking.

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 Tiruchirappalli - 620 002

INSTITUTION'S INNOVATION COUNCIL

PG & Research Department of Mathematics
 organises a webinar
 on
DESIGN THINKING FOR INNOVATION
 Commemorating
"The World Entrepreneurs Day"

Presided by
Rev. Dr. (Sr.) A. Christina Bridget,
 Principal,
 Holy Cross College (Autonomous),
 Tiruchirappalli-620 002.

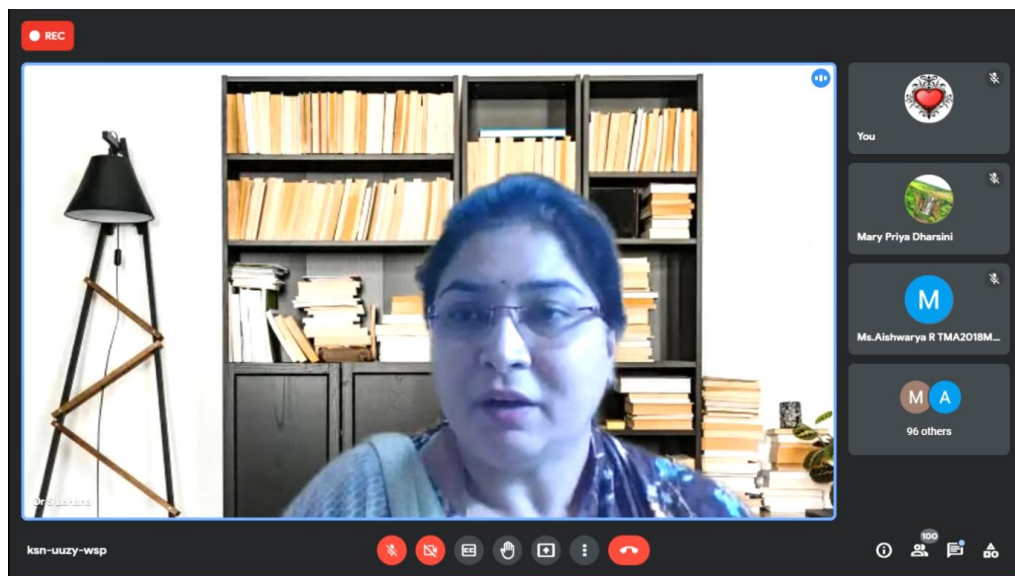
Resource Person
Dr. Sarika Lohana,
 Life Coach, NLP Practitioner
 & Trainer at Scoopin,
 Bangalore.

Date : 21.08.2021
Time : 1.00 p.m to 2.00 p.m

Join us @

 Google Meet

E-Certificate will be provided.



To commemorate "**The World Entrepreneurs Day**", Institution Innovation Council of the PG & Research Department of Mathematics conducted an Essay Writing Competition on the topics "**Opportunities & Challenges of Women Entrepreneurship**" and "**Impact of COVID 19 on Women Entrepreneurship in**

India” on 22nd August 2021. The Under Graduate and Post Graduate students of Mathematics actively participated in the competition and won prizes.

The Webinar on '**Career Opportunities in TNPSC and UPSC**' was organized on 16th September 2021. The speakers of the webinar were **Ms. M. Divya**, IRS, Deputy Commissioner, Customs & GST, Ministry of Finance, Government of India and **Mr. Sivarajavel**, Director of Sivarajavel IAS Academy, Chennai. Ms. M. Divya started the session by explaining how UPSC exams can make someone eligible for 21 different services. She clarified about the series of tests to be faced in competitive exams and their importance. Mr. Sivarajavel emphasized on the etiquettes to be followed to face the UPSC exams. He shared the syllabus for the exam and spotlighted one of the questions which were asked in the preliminary exam of 2017.



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PG & Research Department of Mathematics
organises a webinar
on
Career Opportunities in TNPSC and UPSC


Resource Person
Ms. M. Divya, IRS
Deputy Commissioner, Customs & GST,
Ministry of Finance
Govt. Of India


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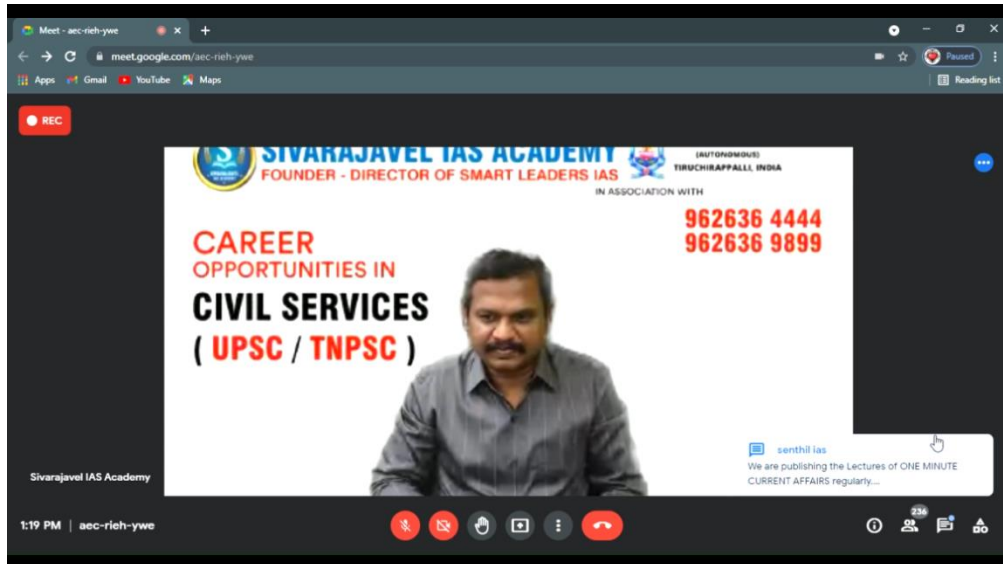

Resource Person
Mr. S. Sivarajavel,
Director,
Sivarajavel IAS Academy,
Chennai.

Organised by
Dr. W. Ritha,
Head & Assistant Professor,
Department of Mathematics,
Holy Cross College(Autonomous),
Tiruchirappalli - 620 002.

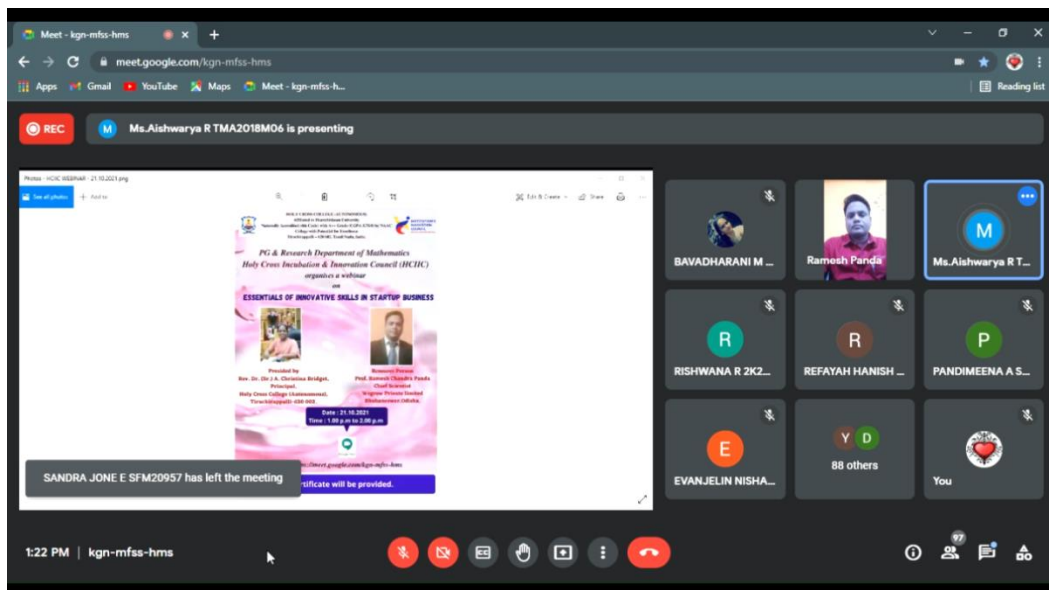
Join us @

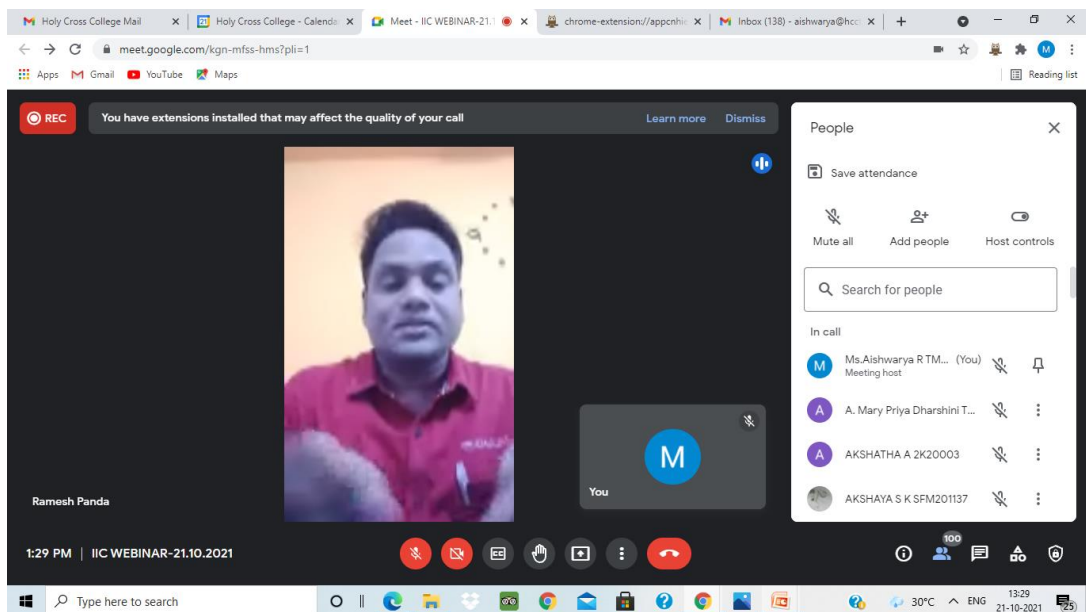

Date : 16.09.2021
Time : 1.00 p.m to 2.00 p.m

This webinar is exclusively for I PG and III UG Students of Mathematics, HCC.



The Institution’s Innovation Council of PG & Research Department of Mathematics organized a webinar titled “**Essentials of Innovative skills in Start-up business**” on 21st October 2021. **Prof. Ramesh Chandra Panda**, Chief Scientist, Wegrow Private Limited, Bhubaneswar, Odisha explained the importance of innovative skills in emerging technology of Start-up business. He also briefed about the complication of innovative project work. At the end of the lecture, he insisted on the students to involve themselves in the process of idea generation towards innovation





The “NET/SET Coaching Class” on “Linear Algebra” was conducted by the PG and Research Department of Mathematics, on 10th January 2022. **Mr. D. Chellapillai**, Guest Faculty, Department of Mathematics, Bharathidasan University, Tiruchirappallimainly focused on the NET/SET exams coaching for the post graduate students. He motivated and encouraged the students to prepare for this exam.

The “NET/SET Coaching class” on “Linear algebra” was conducted on 3rd February 2022. **Mr. D. Chellapillai**, Guest Faculty, Department of Mathematics, Bharathidasan University, Trichy revised the concept of basis, linearly dependent and linearly independent concept. He interacted with the students and gave a few examples.

REC D Chellapillai is presenting

$\begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix} = 0 \neq 0$ Linearly Independent
 $\alpha_1 u_1 + \dots + \alpha_n u_n = 0$
 $\alpha_1 u_1 + \dots + \alpha_n u_n = 0 \Rightarrow \alpha_1 = \alpha_2 = \dots = \alpha_n = 0$

Suppose $\alpha_1 (1,0) + \alpha_2 (0,1) = (0,0)$
 $(\alpha_1, 0) + (0, \alpha_2) = (0,0)$
 $(\alpha_1 + 0, 0 + \alpha_2) = (0,0)$
 $(\alpha_1, \alpha_2) = (0,0) \Rightarrow \alpha_1 = 0$
 $\alpha_2 = 0$

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meetink link - sl211191@hcctrc Meet - tva-zbfa-bmu chrome-extension://appchhief... chrome-extension://appchhief...

meet.google.com/tva-zbfa-bmu

D Chellapillai is presenting

$T(x) = aT(x)$
 Hence T is linear.
 $T(x+y) = 1+2(x+y) = 1+2x+2y$
 $T(x) + T(y) = 1+2x + 1+2y = 2+2x+2y$
 $1+2x+2y = 2+2x+2y$

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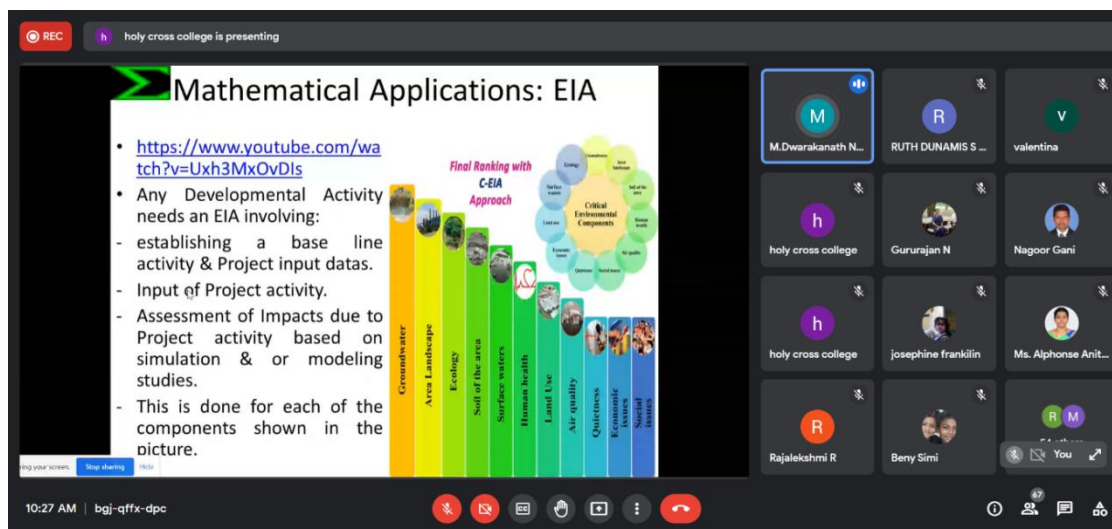
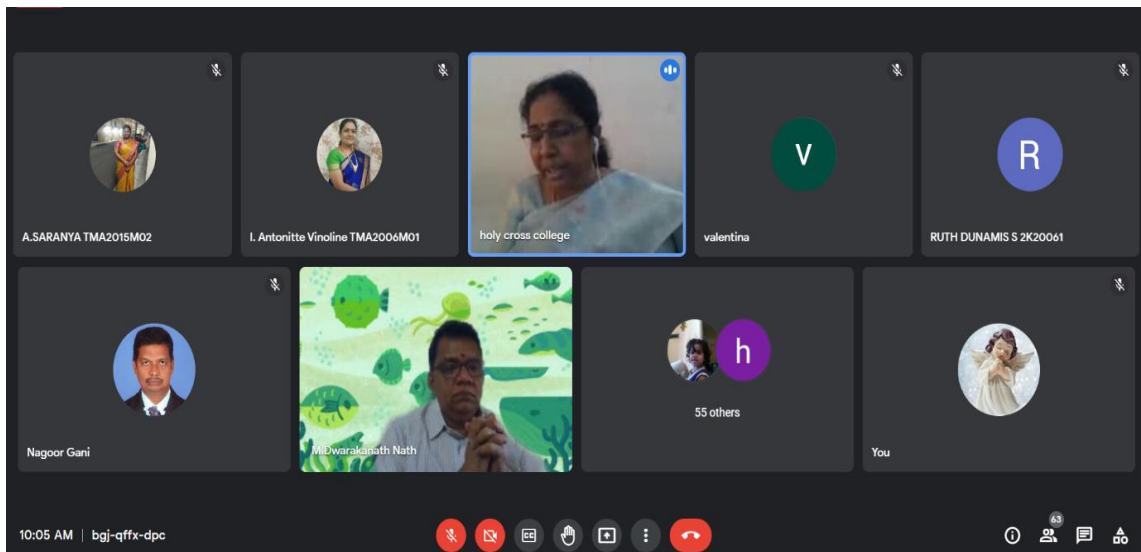
Holy Cross Incubation & Innovation Council (HCIIC), PG & Research Department of Mathematics organized a seminar titled “**Design Thinking for a better Future**” on 16th February 2022. **Dr. J. Amala Infant Joice**, Assistant Professor of Chemistry, IIC Innovation Ambassador, Holy Cross College (Autonomous),

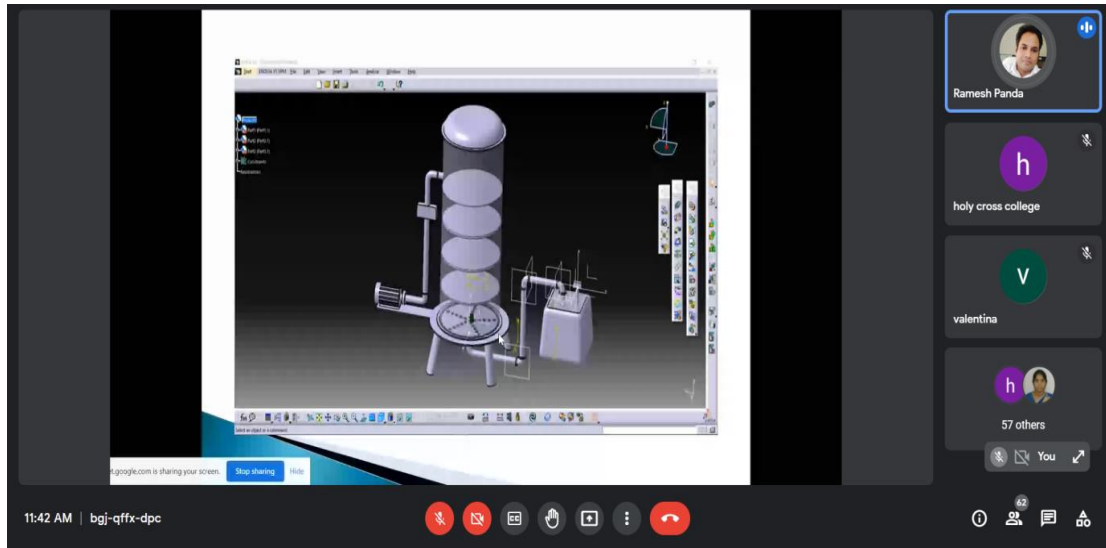
Tiruchirappalli explained the importance of design thinking skills required in recent times to develop new innovative products. The session gave a deep insight on the various stages involved in design thinking to promote innovation.



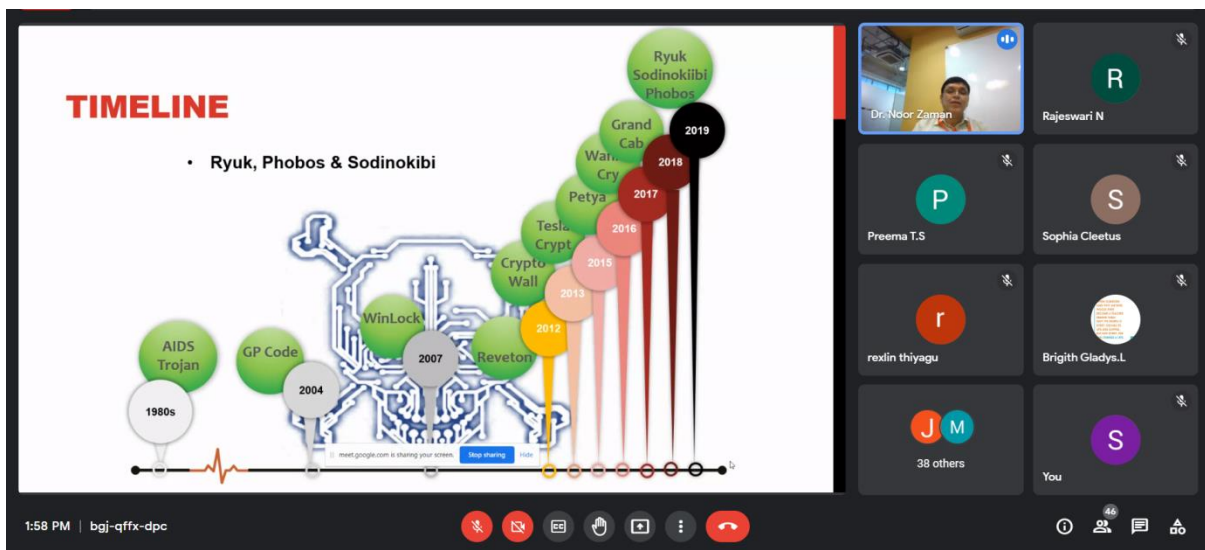
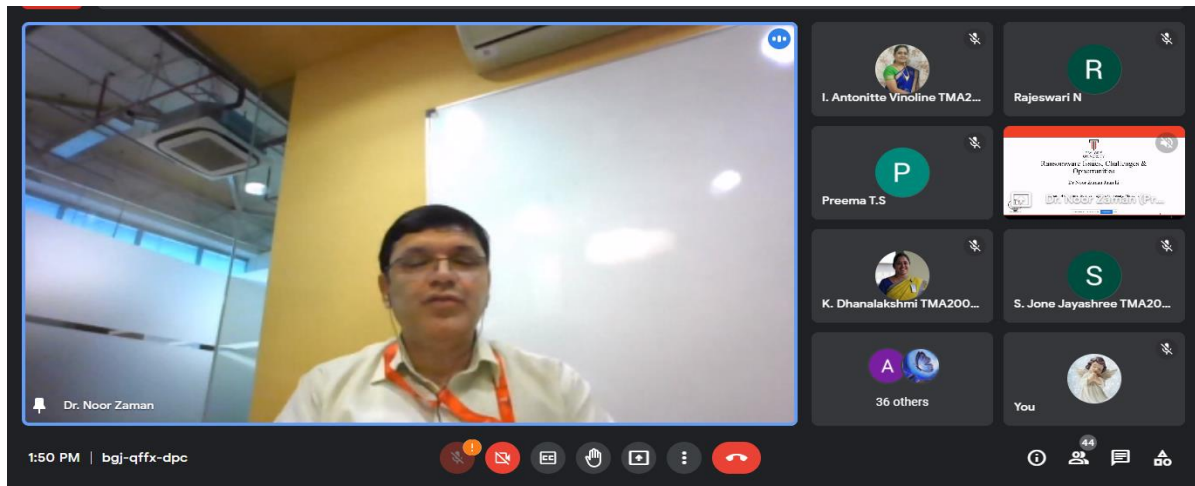
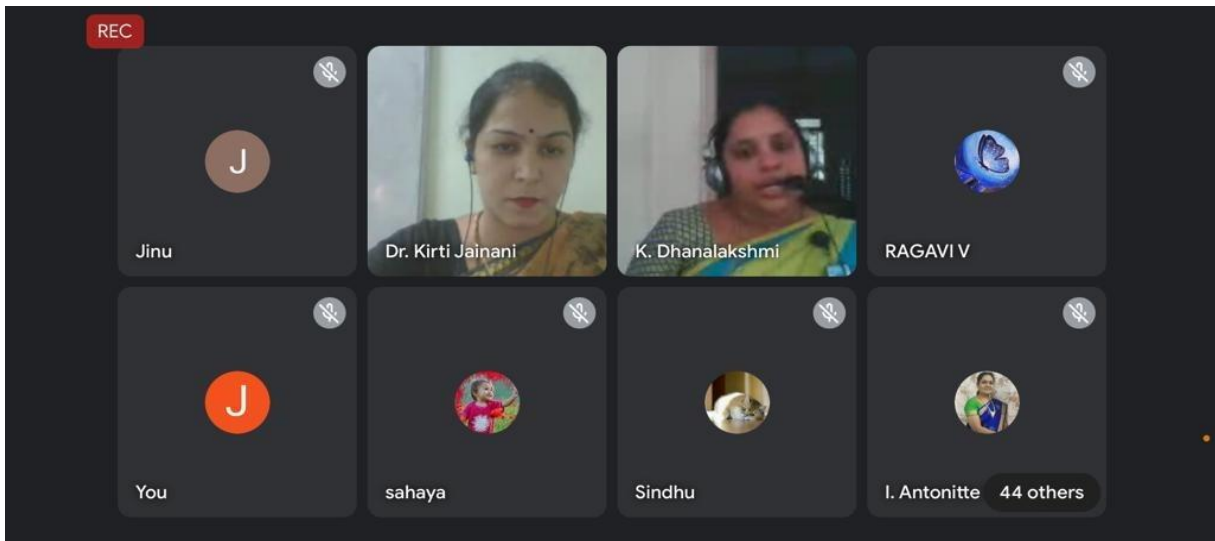
To inculcate the students with the knowledge on Mathematics applications in the current scenario, two days Online International Conference was organized on the topic **"Present Trends in Applications of Mathematics"** on 19th and 20th April 2022, with

four Technical Sessions. **Dr.M.Dwarakanath**, Former Director, DSTE and Member Secretary, Puducherry Pollution Control Committee, Visiting Faculty –DESM, Bharathidasan University, Trichy, inaugurated the International Conference on 19thApril 2022. The first technical session was commenced by **Prof.Ramesh Chandra Panda**, Chief Scientist, Wegrow Private Limited, Bhubaneswar,Odisha handled the Technical Session II on the topic "**Higher Education Research Standard & Innovation Mathematical Modelling**". The talk delivered by the resource person motivated the audience to contribute their ideas and innovation on mathematical modelling.





The second day of the International Conference was held on 20th April 2022. **Dr. Kirti Jainani**, Associate Professor, General Management & Marketing, Institute of Rural Management, Jaipur, Rajasthan briefed on the topic "**Applications of Business Mathematics in Management**". The resource person elucidated the applications of business mathematics and its vast opportunities in management. Technical Session IV was presided over by **Dr. Noor Zaman Jhanjhi**, Associate Professor, School of Computer Science, SCS, Taylor's University, Malaysia. He spoke on the topic "**Ransomware Security Issues and Challenges**". This session discussed the applications of Mathematics and Computer Science. After the technical sessions, more than 35 research papers were presented by the participants after scrutinizing the research papers received from all over India and the papers were also published in UGC-CARE list journals. The Valedictory Address was presided over by **Dr. N. Gururajan**, Retired Professor, Post Graduate Studies, Kanchimamunivar Centre, Pondicherry.





The PG & Research Department of Mathematics arranged one day tour to the Kodaikanal for II PG and III UG students on 4th February 2022. Students visited many places like “Coaker’s walk”, “Upper Lake Point”, “Pine Forest”, “Lake” and “Silver Falls”. Finally the day ended with excitement and good memories.