DVV Clarifications

3.2.2 Provide detailed report for Social Entrepreneurship - the need of the hour during covid-19 FDP on Mathematical Analysis and its Application Spice Processing Unit Webinar Introduction to Econometrics with photograph with date and captions; title of the workshops / seminars conducted signed by competent authority.



विवेकानन्द कॉलेज VIVEKANANDA COLLEGE (दिल्ली विश्वविद्यालय) (UNIVERSITY OF DELHI) विवेक विद्यस्, दिल्ली-110095 VIVEK VIHAR, DELHI-110095 GRADE 'A' ACCREDITED By NAAC

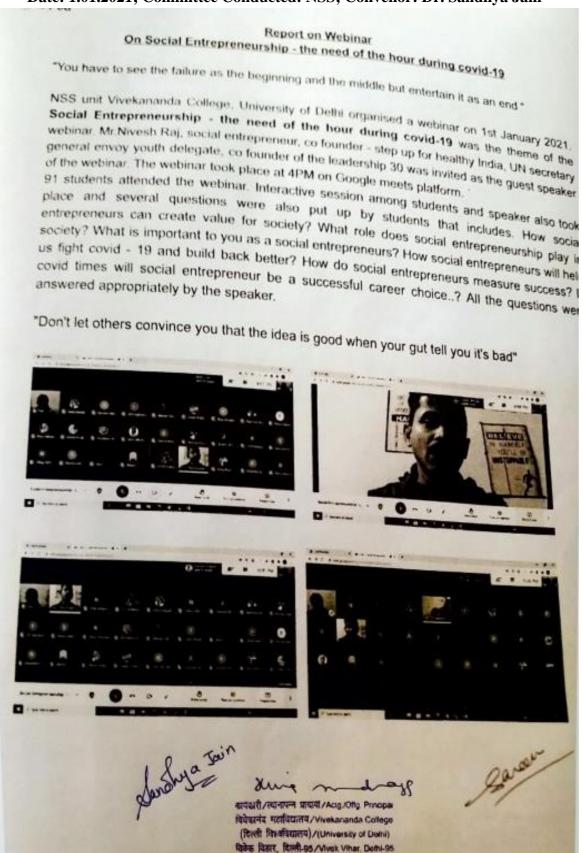
VIVEKANANDA COLLEGE UNIVERSITY OF DELHI

SUPPORTING DOCUMENTS FOR DVV: 3.2.2

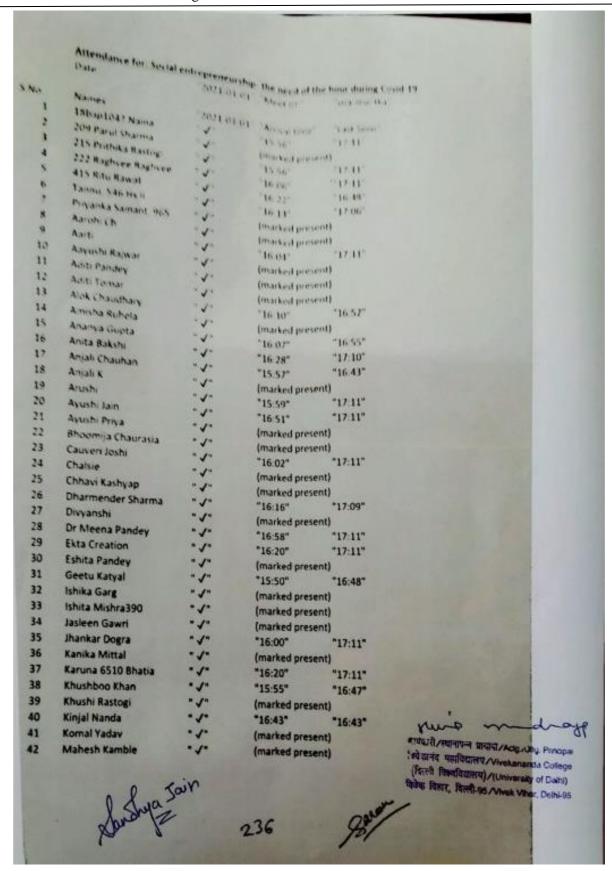
The supporting documents for Metric No. 3.2.2 DVV clarification are as follows.

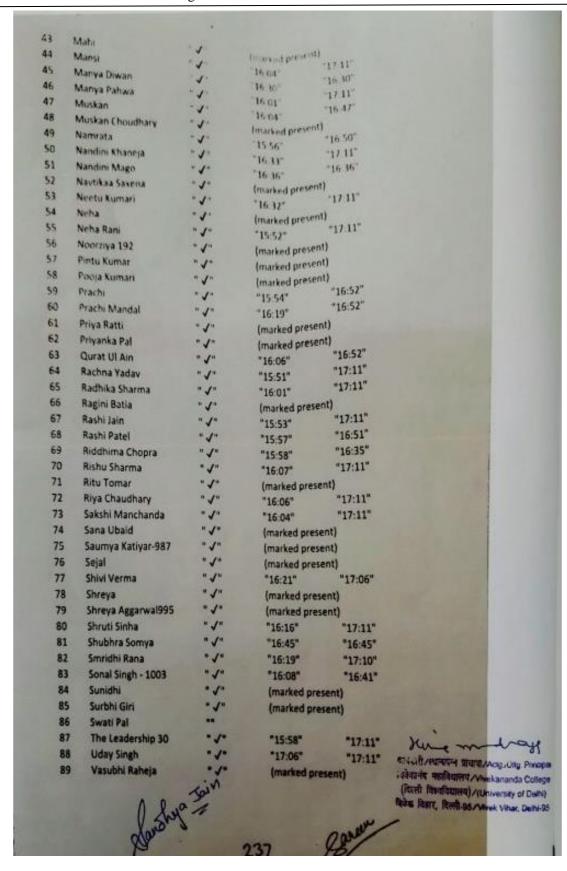
S. No.	Title of Seminar/Conference/ Workshop	Page No.
1.	Report of Webinar on Social Entrepreneurship-the need of the hour during COVID-19	<u>1-5</u>
2.	Report of One Week FDP on Mathematical Analysis	6-20
3.	Report of Webinar on Spice Processing Unit	<u>21-22</u>
4.	Report of Workshop on Introduction to Econometrics	<u>23-70</u>

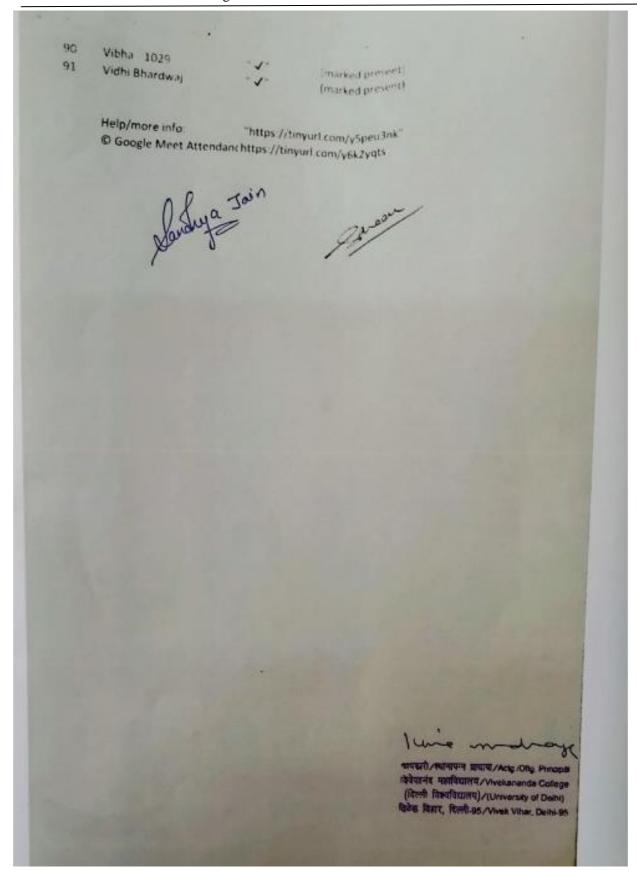
1. Title of Webinar: Social Entrepreneurship- the need of the hour during COVID-19; Date: 1.01.2021; Committee Conducted: NSS; Convenor: Dr. Sandhya Jain











2. Title: One Week FDP on Mathematical Analysis; Date: 26.07.2021-31.07.2021; Department: Mathematics; Convenor: Dr. Sandhya Jain







ONE WEEK ONLINE FACULTY DEVELOPMENT PROGRAME

On

-MATHEMATICAL ANALYSIS AND ITS APPLICATIONS"

26th July 2021 to 31st July 2021

Live Sessions: 10 AM - 1:15PM

Organized by

Mathematics Department,

Vivekananda College

In collaboration with

Hansraj College

(University of Delhi)

8

Mahatma Hansraj Faculty Development Centre

(A Centre of Ministry of Education, Govt. of India under PMMMNMTT Scheme)

कार्क अवेर (वि

कार्यकारी/स्थानापन ज्ञाचान/Acig/Utig Principal विकासनेद महाचिदालप/Vivekananda College (हिल्ली विकासियालय)/(University of Delhi) चित्रेक चित्रार, दिल्ली-95/Vivek Vitor, Delah 95

ORGANISING TEAM

MHRFDC TEAM

VIVEKANANDA COLLEGE TEAM

Prof. (Dr.) Rama

Dr. Hina Nandarjog

Principal, Hansraj College &

offg. Principal,

Chairperson, MHRFDC

Vivekananda College

Dr. Jyoti Bhola

Dr. Sandhya Jain

Coordinator MHRFDC

FDP Convenor

Mr. Ashutosh Yadav

Mrs. Anju Nagpal

Dy. Coordinator MHRFDC

Teacher-in- Charge, Department of

Mathematics

Organising Committee

Department Of Mathematics

राज्यसी/स्थानाञ्च प्राचाया/Acg./Utg. Precipal । वर्षेश्वाचेद महाविद्यालय/Vivekanondo Collego (दिल्ली विश्वविद्यालय)/(University of Dolhi) विवेद विहार, दिल्ली-95/Vivea Vibar, Dolhi-96

CONTENT

- 1. Objectives of the FDP
- 2. Inaugural Session
- 3. Day-Wise Report
- 4. Valedictory Session
- 5. Glimpses of the Journey

OBJECTIVES OF THE FDP

Participants who successfully complete the programme should be able to reach the following goals:

- To impart vital skills and deepen knowledge of Mathematics and to gain skills through the course work.
- 2. Be able to communicate mathematical/ logical ideas in writing.
- 3. Have a deeper understanding of Mathematical Analysis.
- To introduce some cutting edge research trends in the field of Mathematical Analysis.
- Be familiar with several subfields of Mathematics (e.g. Numerical Analysis, Topology, Operations Research).

ध्यवदारी/स्थानायन आयाप/AcigJOng, Pincipal प्रवेकानंद महाविद्यालय/Vivekananda College (विल्ली विश्वविद्यालय)/(University of Own) विवेक विश्वर, हिन्सी.95/Vivek Viber, Onlesso

INAUGURAL SESSION

The FDP began with an inaugural session on July 26, 2021 with introductory speech by Dr. Ritika Nagpal followed by presenting a video of lightning the lamp before Maa Saraswati. Welcome address was given by Dr. Hina Nandrajog (Principal, Vivekananda College), Mrs. Anju Nagpal (FDP Coordinator). They apprised the audience about the programme "Mathematical analysis and it's applications", its objectives and learning outcome and emphasized about the importance of applications of Analysis in an academic set up.

The Inaugural address was followed by announcement of a set of instructions for the participants by Dr. Sandhya Jain (FDP Convener).

DAY-WISE REPORT

The program was held over the course of six days, two live sessions per day. The FDP covered a wide array of topics including their real life applications. At the end of each day, participants were given one-hour library time to do self study. At the end of all sessions one MCQ-based assessment was given to test their grasp of the topics and feedback form was also given so that program can be improved in the best manner

Day 1: 26th July, 2021 (Monday)

Session 1: The first session of the FDP focused on "Inequalities and their connection with function spaces" and was delivered by Prof. Pankaj Jain (Professor, South Asian University). The session began with a welcome address by Dr. Ritika Nagpal. The session included the topics of functional inequalities. Prof. jain had mentioned the important role of inequalities in several areas of Mathematical Sciences the lecture of Prof. Pankaj jain was started with the basic

प्रवेचकार्थः प्रामित्रकारा-Vivokaranda Garege (दिस्ती: विश्ववीद्यासम्)/(University of Dohi) वेचेक विश्वर, दिस्ती-85/Vivok Vitar, Delhi-96 school time inequalities, e.g. the relationship between the Harmonic Mean, Geometric Mean and Arithmetic Mean Geometric Mean and Arithmetic Mean. The first inequality he introduced was Holder's inequality. He also discussed the Minkowski's inequality and mentioned several cases on different parameters. Next, Sir had connected the relation of inequalities with the sequence space and described the properties of norm on the sequence space. Prof. Jain had highlighted several norms to introduce the Banach space. Furthermore, speaker talked about the connection of Holder's inequality and Minkowski's inequality with the sequence space. Prof. Jain had discussed the integral form/continuous form on the sequence space and introduced measurable functions named as Lebesgue space. The session ended with the vote of thanks expressed by Dr. Ritika Nagpal to the Speaker for his valuable share of knowledge and very interesting and informative talk.

Session II: The second session was held on the topic "Toral Automorphism" by Prof. Tarun Das (Professor, Department of Mathematics, University of Delhi). The session began with a welcome note by Mrs. Seema Taneja.

Prof. Das began his session by introducing the basics of Algebra followed by the results on symmetries, homeomorphism and automorphisms. He perfectly spotlighted the geometrical concepts of torus, the integral matrices with determinant + 1 and -1 and discussed Total Automorphism on the quotient. The session ended with the vote of thanks expressed by Mrs. Seema Taneja to the Speaker for his very interesting and informative talk.

The presentation of both speakers enhanced their topic and made participants easy to understand. Both sessions were highly interactive and engaging.

Day 2: 27th July, 2021 (Tuesday)

Session I: The first session of the day was on "Mathematical analysis in learning theory" and the resource person was Dr. Sivananthan Sampath (Associate Professor, IIT Delhi). The session began with welcoming the speaker by Mrs. Preeti Chhachhia.

Dr. Sampath began his session by introducing the reproducing kernel Hilbert space. He gave an example of Sobolev space. After that he defined the notion of positive definite kernel. He also established that there is a one-one correspondence

Navarya Jain

দার্থান্তিব্যালন প্রত্যাপিত্য গানু Principal নিজ্ঞান প্রত্যাপিত প্রত্যাপ্ত প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রত্যাপ্ত প্রকৃষ্ণ পর্ব প্রকৃষ্ণ প্রকৃষ্ণ পরিকৃষ্ণ প্রকৃষ্ণ পরিকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ পরিকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ প্রকৃষ্ণ পর্ব ক্রিষ্ণ প্রকৃষ্ণ পরিকৃষ্ণ প্রকৃষ্ণ পরিকৃষ্ণ প্রকৃষ্ণ পরিকৃষ্ণ

between the RKHS and the symmetric positive definite kernel and then discussed about the construction of RKHS using a given kernel K. Some concrete examples of positive definite kernel were also given along with regularization. The talk ended with a vote of thanks to the speaker given by Mrs. Preeti Chhachhia.

Session II: The second Session was on "Stability and Bifurcation- An Introduction" and the talk was given by Prof. Peeyush Chandra (Retired Professor, IIT Kanpur). The session started with the welcome and introduction of the speaker by Dr. Shivani Dubey.

The session started with the introduction of Ordinary differential Equation. In this talk, Prof. Chandra defined basic terminologies and form the base for Stability and Bifurcation. To that end, he defined critical points and linearization. He gradually defined the concept of Stability and phase plane analysis of linear and non linear system. As the audience got familiar with linear stability, he discussed the notion of non linear stability.

Prof. Chandra finally discussed about the Bifurcation and gave some examples. Advanced topic and Models of ecological system were left for the next session. At the end of the session, Dr. Shivani Dubey thanked the speaker for giving such a wonderful and an informative session. She further added that we are grateful for the time and effort you took to share your expertise knowledge with us.

Day 3: 28th July, 2021 (Wednesday)

Session I: The first session was conducted on "Modeling and Analysis of ecological system with harvesting" again by Prof. Peeyush Chandra (Retired Professor, IIT Kanpur). The session began with a welcome note by Dr. Shivani Dubey.

The session was in continuation of the last session delivered by him. Prof. Chandra started with the definition of model and gradually developed several standard models like General Prey-Predator model, non-dimensional model etc. He gave interesting examples on several models. In his talk, we have studied the existence of saddle node Bifurcation with the help of Sotomayor's theorem. He also established the global stability result of unique interior equilibrium point. Prof. Chandra's talk was very interesting and knowledgeable. He inspired and motivated us toward the development of Covid-19 model which is very celebrated topic in the recent time. The talk ended with the vote of thanks given by Dr. Shivani dubey.

दः अवी/स्थागस्य पारात्र/Acq राष्ट्र गामक्रम रिवेदानंद पदापियागरं, vivakanasto College (दिस्ती विकायियासप्//(University of College प्रिकेट पितार, दिस्ती-05/Vivak Vitor, Ortic 95 Session II: The second session was held on "Mathematical analysis in learning theory" again by Dr. Sivananthan Sampath (Associate Professor, III Delhi). The session started with the welcome of the speaker by Mrs. Preeti Chhachhia. In this session, Dr. Sampath introduced learning with the help of examples. This lecture was in continuation of the last session which was delivered by him on the same topic. He then defined some learning algorithms and discussed about convergence analysis for regularized learning algorithms. Dr. Sampath discussed a very interesting example of continuous Glucose monitoring from a human body which provide an estimated BG-values in every 5 or 10 minutes. The talk was very interesting in the sense of real life applications of Analysis. The session ended with thanking the speaker for his valuable efforts by Mrs. Preeti Chhachhia.

Day 4: 29th July, 2021 (Thursday)

Session 1: The opening session on Day 4 included a talk on the topic "Operators on Hilbert space and Positivity" which was delivered by Prof. Harish Chandra (Professor, Banaras Hindu University). The session began with welcoming the speaker by Dr. Sandhya Jain.

Prof. Harish Chandra started his session with the introduction of Hilbert spaces including basic results. He then defined bounded linear operators on a Hilbert space. As the basic terminologies developed, he moved to self adjoint Operators and also discussed their comparison with real numbers. Finally, he characterized positive Operators and compared them with positive real numbers. The session was very interactive and engaging. Prof. Chandra invited participants to send their queries personally. The talk ended with thanking the speaker by Dr. Sandhya jain. Session II: The next session was on the topic "Weighted Shifts on directed graphs and their applications" and delivered by Prof. Sameer Chavan (Professor, IIT Kanpur). The session started with a welcome note and introduction of the speaker by Mrs. Seema Taneja.

In the first half of his talk, he overviewed the theory of weighted shifts on directed graphs. He also defined the notion of circularity and explained the topic through the help of interesting examples. In the second half, he discussed the role of weighted shifts on directed graphs in the wandering subspace problem and the Cauchy dual subnormality problem. He concluded his talk with some open

(Penil) Statistics (Purcers of Debi) Salte Stati, Penils of Minis Value Debi-St problems. The session was very engaging and ended with a vote of thanks given by Mrs. Seema Taneja.

Day 5: 30th July, 2021 (Friday)

Session 1: The topic for the first session was "Discontinuity at fixed points and applications to Neural networks" and the honorable speaker was Prof. R. P. Pant (Professor, Kumaun University). The session began with welcoming the speaker by Dr. Ritika Nagpal.

Prof. Pant started his talk by introducing Fixed point theorem. He then discussed the problem of continuity at fixed points. He established the existence of fixed points and discussed continuity and discontinuity at those points by developing some concepts like k-continuous self mapping. He illustrated the theorem in Euclidean case. Finally he gave application of the above theorem in Neural networks with discontinuous activation function. The talk was full of interesting areas of Analysis. He motivated all participants to do research in this area. The session ended with thanking the speaker by Dr. Ritika Nagpal.

Session II: The title of the session was "Wavelet transform" and the resource person was Dr. Ashish Pathak (Assistant Professor, Banaras Hindu University). The session began with welcome address by Mrs. Anita Bakshi.

The session started with the introduction of wavelet in Sobolev and the latest and the session started with the introduction of wavelet in Sobolev and the latest and the session started with the introduction of wavelet in Sobolev and the session started with the introduction of wavelet in Sobolev and the session was "Wavelet transform" and the resource person was Dr. Ashish Pathak (Assistant Professor, Banaras Hindu University).

The session started with the introduction of wavelet in Sobolev space over local fields of positive characteristics. He then defined the concept of Multilevel Wavelet Packets in Sobolev Space over Local Fields of positive Characteristic and gave many interesting examples. He also introduced biorthogonal wavelets and biorthogonal wavelet packets in Sobolev space over local Fields of positive Characteristic. Finally he discussed about wavelets for Non-uniform Non-Stationary MRA on H^s(K). The session ended with a vote of thanks given by Mrs. Anita Bakshi.

Day6: 31st July 2021 (Saturday) Valedictory Session

A valedictory session was held to mark the end of the six-day journey of the FDP on the July 31, 2021 in august presence of Dr. Hina Nandrajog (Principal, Vivekananda College), Dr. Sandhya Jain (FDP Convener), Mrs. Anju Nagpal (FDP Coordinator) and all the Faculty members of the Department of Mathematics,

(दिल्ली दिस्तविद्यालय)/(University or (new)) विवेद विकार, दिल्ली-95/Vives Vision (Light)क

विकेशनीय महाविधानारी Availament's College

Vivekananda college. The valedictory session was duly conducted to honour the dignitaries as well as the speakers, panelists and the participants.

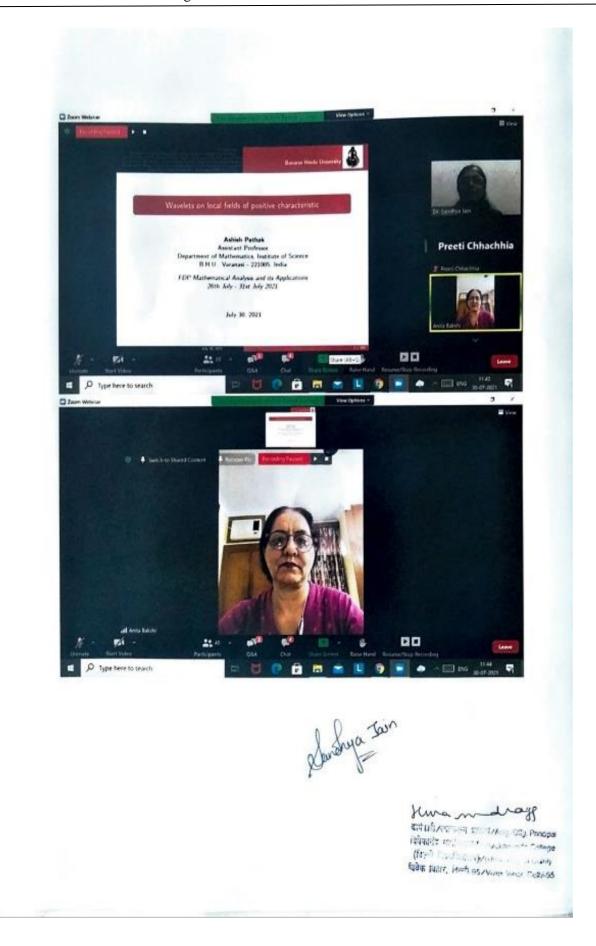
The session started with a welcome address by Dr. Shivani Dubey. The session was addressed by Mrs. Anju Nagpal (FDP Coordinator) who delivered a formal vote of thanks and congratulated all participants for successful completion of the FDP and learning about Mathematical analysis. She heartily congratulated and appreciated the entire organizing teams for their efforts for the smooth conduct of the program. She also encouraged that more advance programs should be organized as it has become very integral part of the academia. They appreciated the resource persons for their presentations. At the end, Dr. Sandhya Jain concluded the FDP and spoke at length about the benefits of such kinds of programmes that are increasingly relevant in the field of higher education in this pandemic. She further added that these kind of educational programmes are very encouraging for the teaching fraternity. She expressed her gratitude to the guests for their gracious presence and thanked the Resource Persons, Panelists, Members of Organizing Team and all the Participants for their enthusiastic cooperation.

GLIMPSES OF THE JOURNEY



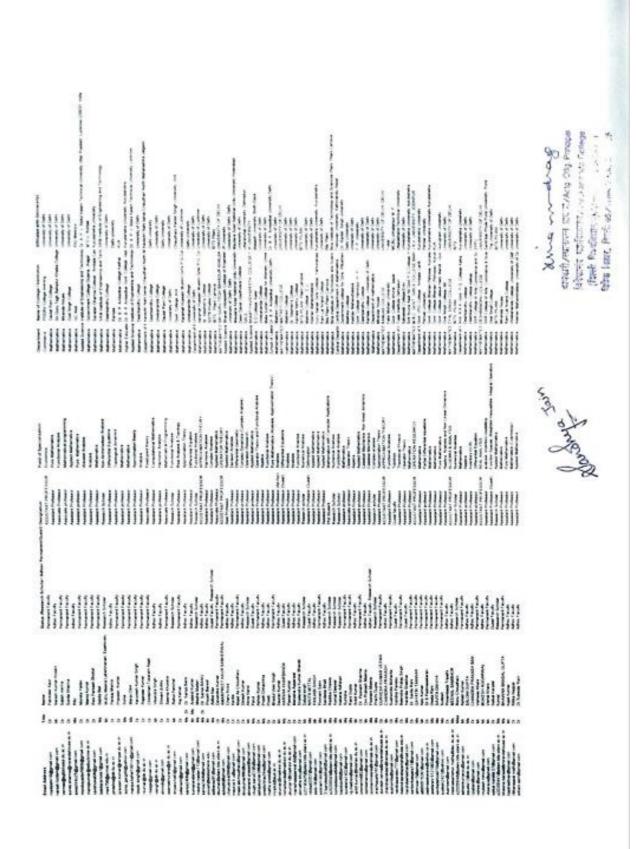
Saranya Jain

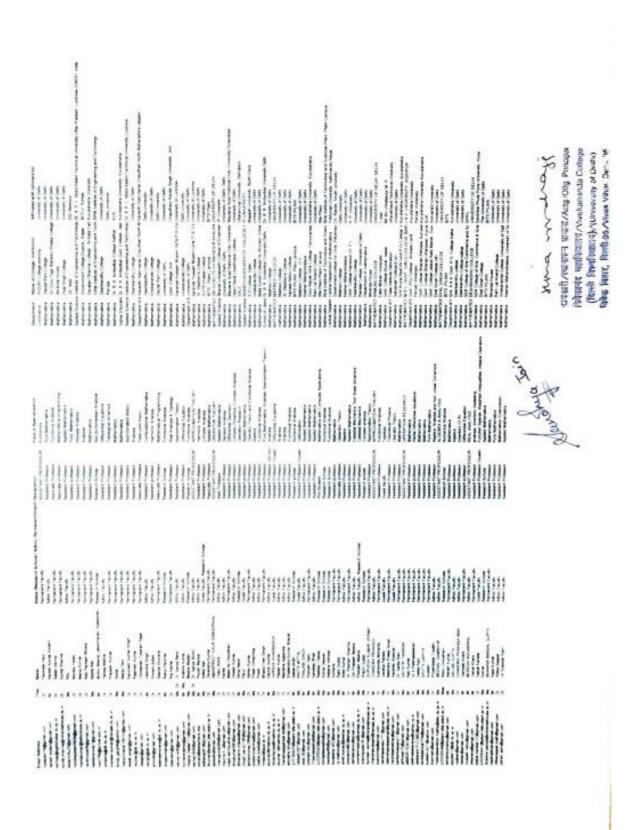
おいる 一人の Orthogod Cologe (feet Deaffers)/(June 1977) Are chananda College (feet Deaffers リンパルロシャット of Deaff Balls Nate, Beth 95 / Vives Viber Deaff 95 / Vives Viber 95

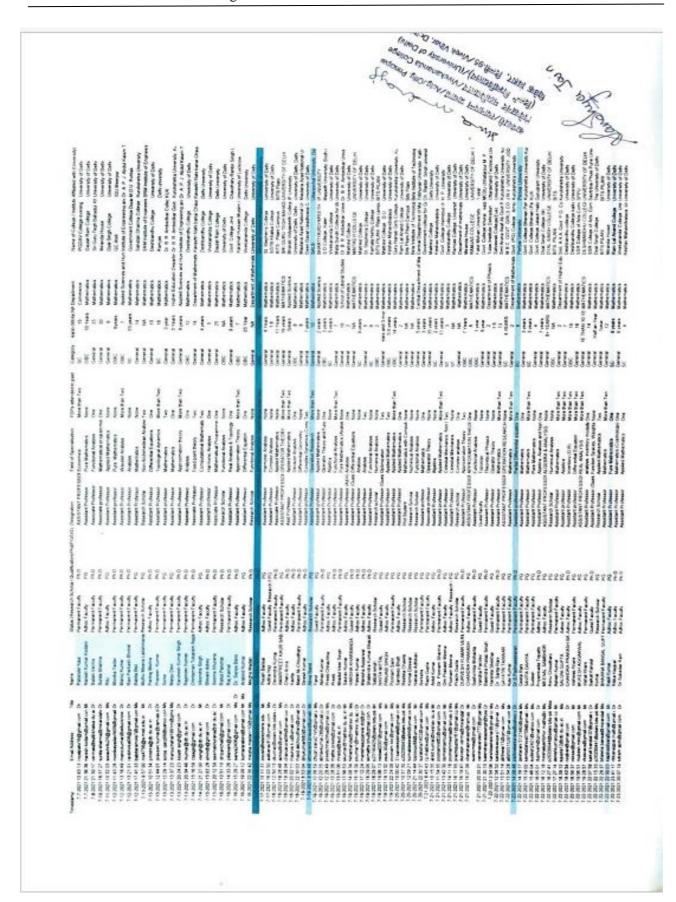


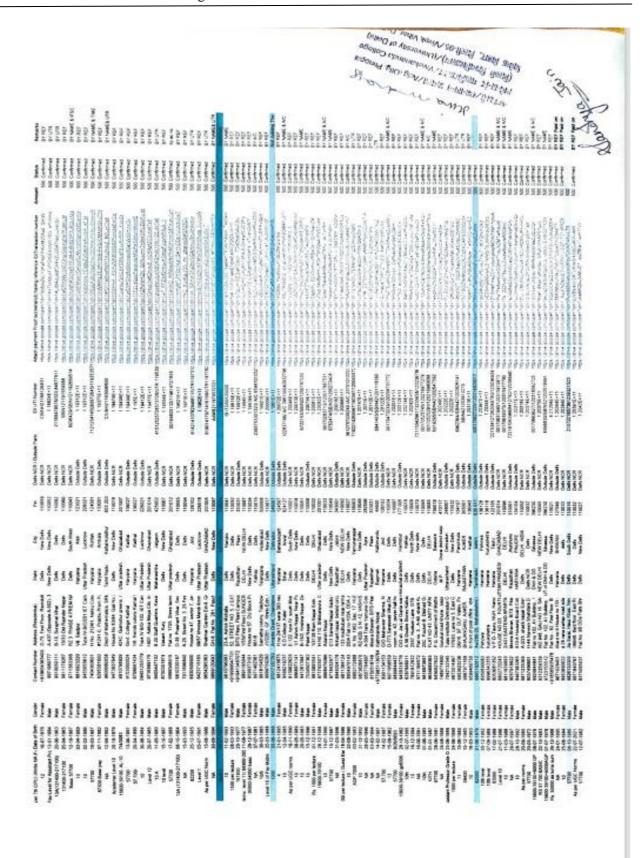


वार्चको/८ दायम् । एका//८०९ ८०५, Prinspal विकानर भगतिकार - websited College (दिल्ली विकासियाक्ष्य)/(University of Outs) विकेष विकार, दिल्ली-85/Vivek Viber, Gené-98









3. Title of Webinar: Spice Processing Unit; Date: 23.09.2021; Committee: Vidya Vistar; Convenor: Dr. Sukhneet Suri

11.Report of Spice Processing Unit Webinar

Description: An MOU with Institute of Industrial Development was signed on 23rd September, 2021 as a step towards partial fulfilment of objectives of Vidya Vistar Scheme. As a first collaborative activity with IID, a webinar on 'Spice Processing Unit' was held on 3rd October, 2021. An industry expert from a related field took a two-hour session commencing from 4 pm in order to guide the participants in establishing a new venture of spice processing.

Number of Participants: Information awaited from IID (Approx. 40)

Outcome: Participants were imparted information and knowledge on how to start a micro spice processing unit.

Schedule: 3rd October, 2021(4pm onwards)

It was an online event July

(दिल्ली विकायविद्यालय)/(University of Delhi) वेतेक विकार, दिल्ली-95/Vivek Viver, Delhi-95



4. Title of Workshop: Introduction to Econometrics; Date: 6thMarch, 13th March, 10th April and 15th April 2021; Committee: Skill Enhancement; Convenor: Mr. Amit Kumar

1. Report of Workshop on "Introduction to Econometrics" offered by Skill Enhancement Committee

Skill Enhancement Committee offered a course on "Introduction to Econometrics" to the students of our college. The course was taught by Mr. Amit Kumar, Department of Economics. A total of 4 classes (2 Hours each) were taken on 06/03/2022, 13/03/2022, 10/04/2022 and 15/04/2022 via Google meet. Following was the link for the classes:

https://meet.google.com/bdd-veku-bsw

The following topics were covered during the course:

- 1. What is Econometrics?
- 2. Applications of Econometrics
- 3. Types of Data: Cross-Sectional Data, Time Series Data and Panel Data
- 4. Simple Linear Regression using Ordinary Least Square Method
- 5. Assumptions of Classical Linear Regression Model
- 6. Properties of OLS Estimators
- 7. Gauss-Markov Theorem
- 8. Goodness of fit
- 9. Interval Estimation and Hypothesis testing: Confidence Interval and Test of Significance Approach
- 10. Regression and Hypothesis testing using MS Excel
- 11. Interpretation of Regression Results

List of Students enrolled in the

1. Manya	B.A. (P) II year
2. Mahi Tyagi	B.A. (P) II year
3. Karuna	B.A. (P) II year
4. Shikha	B.A. (P) II year
5. Shruti Jain	B.A. (P) II year
6. Vaidehi	B.A. (P) II year
7. Mahek chawla	B.A. (P) II year
8. Ramsha	B.A. (P) II year
9. Manshi	B.A. (P) II year
10. Prachi garg	B.A. (P) II year
11.kanika pokhriyal	B.A. (P) II year

Runar

बद्धकारी/स्थानायन प्राचल/Acig/Orig Prinopal विवेकानंद महाविद्यालय/Vivekananda College (दिल्ली विकलिक्सालय)/(University of Dollin) विकेक विकार, दिल्ली-95/Vivek Vihar, Delin-95

12 Mansi	B.A. (P) II year	
13 Shabeena	B.A (P) II	
3 Shaceena	year BA (P) II	
14 Sugandha Jain	year	
	BA (P) II	
15 shruti sinha	year	
16 Stuti Kaushik	BA (P) II	
	BA (P) II	
17 Akriti Rai	year	
O Mark Control	BA (P) II	
18 Mitali Gupta 19 Vishakha	year D.A.(D) II	
rathore	B.A. (P) II year	
20 muskan	BA (P)II	
Malhotra	year	
21 Vidisha Sharma	BA (P) II	
Li Viusia Sharma	year B.A.(P)II	
22 Vasubhi Raheja	year year	
	BA (P) II	
23 Riya Singh	year	
24 Ritu Tomar	B A (P) II year	
25 Manisha	BA (P) II	
Kumari	year	
26. Archana Chamola	B.A. (P) II	
Criditola	year B.A.(P)II	
27 Akriti	year	
28 Radhika	B.A. (P) II	
Sharma	year B.A. (P) II	
29. Nisha grower	year	
20 Add Town	B.A. (P) II	
30 Aditi Tyagi	year B.A. (P) II	
31. Mahi	year	
32. Saba kaushar	B.A. (P) II	
Se. Saua Kaushar	year B.A. (P) III	
33 Shivangi Jain	year	
34 Jehika Dahuja	B.A. (P) III	
34. Ishika Pahuja 35. Ashika	year B.A. (P) III	, v
Aggarwal	year	Quin
36. Prachi	B.A. (P) III	Quirak
Srivastav	year	0
		Muna mult
		(Streft firedisman)
		विगेत विहार, हिल्ली-95/Vivek Vihar, Dehi-



