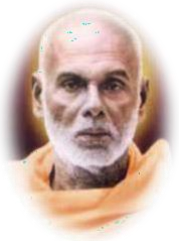

SREE NARAYANA COLLEGE

Karamcode P.O, Chathannur, Kerala- 691572

Affiliated to University of Kerala

NAAC accredited with 'B' grade

Email: snchthannur@gmail.com; Ph: 0474-2593312; Website: https://sncchathannur.ac.in/

Date: 7/6/2023

Activities Conducted Under Collaborative Quality

College has signed MoU with various institutions, and it really enriched our students and it give more exposure to the staff and students.

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

केरळം केरल KERALA

DB 906377

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

SREE NARAYANA COLLEGE, CHATHANNUR

&

FAMICONN INTEGRA

FOR

STUDENT AFFILIATE PROGRAMME AS PART OF EARN WHILE YOU LEARN SCHEME LAUNCHED BY THE COLLEGE, SKILL DEVELOPMENT AND OUTCOME BASED TRAININGS

No. 6917 Rs 100 13/8/2020

Page 1 of 5

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Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

भारतीय गैर न्यायिक

पचास रुपये रु.50

FIFTY RUPEES Rs.50

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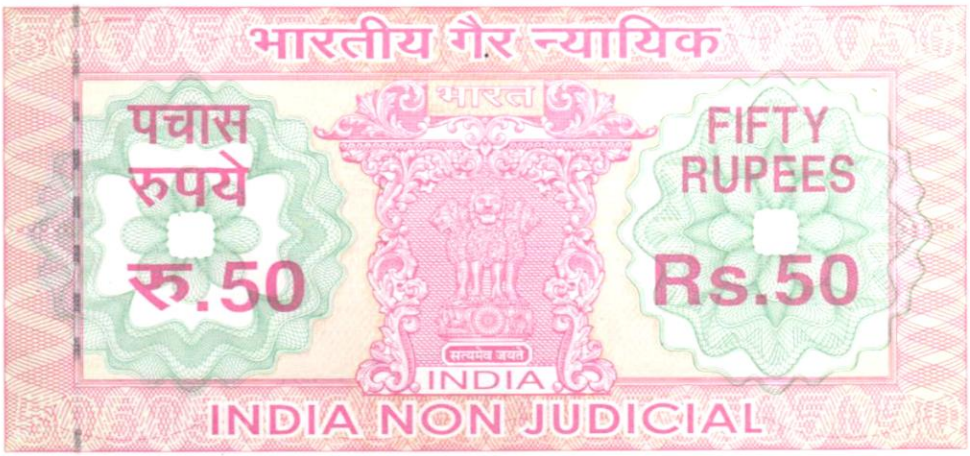

കേരളം केरल KERALA

BZ 023369

MEMORANDUM OF UNDERSTANDING(MOU)

SREE NARAYANA COLLEGE, CHATHANNUR

&

MAGIC LANTERN (The Film People)

This Memorandum of Understanding (MOU) is constituted on 14/07/2020 between the Sree Narayana College, Chathannur affiliated to University of Kerala and Magic Lantern ,(The Film People, Centre for Film & Video Production, Managing Director, Mavelikara,Kerala).The intention behind signing of MOU is meant to facilitate educational knowledge, teaching learning activities, training and practical session and to offer career development activities and placements for the students who are enrolled for the course .The course is designed as per UGC guidelines and will be considered as Certificate course for the first year students and subsequently Diploma course and Advanced diploma course for both second and final year students of the college.The admission to Diploma course is optional to Certificate holder and is optional to advanced diploma course for the diploma holders.

Purpose

This MOU between Sree Narayana College, Chathannur and Magic Lantern (The Film People)that willcontour the collaboration in order to facilitate curriculum-based knowledge, training, practical sessions and to offer career development and placement opportunities for the enrolled students who is completingthe course within the specified time period.

1. **OBJECTIVE**

The general objective behind this Memorandum of Understanding (MOU) is meant to detail the modalities, functions and general conditions incorporated between Principal, Sree Narayana College, Chathannur and Magic Lantern(The Film People)in order to stimulate and facilitate curriculum based knowledge, training, practical sessions and to offer career development and placement opportunities for the enrolled students who is completing the course within the specified time periodMagic Lantern (The Film People) will conduct lecture

MAGIC LANTERN
The Film People
Centre for Film & Video Production
Meghana, Eravankara P.O.Mavelikara, Kerala, 691008
Ph: 09447802075
E-mail: Eravankara@gmail.com

Number 4588 Rs 50/-
Date 15-07-2020
Dr. Lathi. M-S
Principal, SN college, Chathannoor.

UNNIKRISHNAN
STAMP VENDOR
KOLLAM (SPECIAL LICENCE)

DISTRICT STAMP DEPOT
30 JUL 2020
KOLLAM

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Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

भारतीय गैर न्यायिक

पचास रुपये रु.50

भारत

FIFTY RUPEES Rs.50

सत्यमेव जयते

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CD 042919

1. OBJECTIVE

The general objective behind this Memorandum of Understanding (MOU) is meant to detail the modalities, functions and general conditions incorporated between Principal, Sree Narayana College, Chathannur and Principal, Sree Narayana Institute of Technology, Vadakkevila, Kollam in order to stimulate and facilitate curriculum based knowledge and training sessions in Artificial Intelligence and to offer a career development and placement opportunities for the final year B.Sc & M.Sc Mathematics students within the specified time period.

Sree Narayana Institute of Technology, Vadakkevila, Kollam will conduct lectures & training sessions to the final year B.Sc & M.Sc students. In one year two sessions will be conducted and each session with a duration of 3 to 4 hours. Thus, Principal, Sree Narayana College, Chathannur and Principal, Sree Narayana Institute of Technology, Vadakkevila, Kollam have expressed their willingness to cooperate and support each other for introducing the course for both final year B.Sc & M.Sc Mathematics students of the college in order to equip students to grasp the potentiality and viability of latest technology in Artificial Intelligence .

And during this tenure the Department of Mathematics , Sree Narayana College, Chathannur will provide a training in Mathematical Aptitude for the students of Sree Narayana Institute of Technology, Vadakkevila, Kollam.

The specific activities framed and incorporated in MOU are dealt in accordance with consultation between the two parties.

No 32155 11-2-21

SN കോളേജ് ചാത്തന്നൂർ

ഇരവിപുരം വെണ്ടർ
S.സുധീർ

SUB TREASURY
03 FEB
KOLLAM

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Signed by: AMJITH S
Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

भारतीय गैर न्यायिक

पचास रुपये रु.50

FIFTY RUPEES Rs.50

सत्यमेव जयते

INDIA

INDIA NON JUDICIAL

കേരളം केरल KERALA

CD 042918

MEMORANDUM OF UNDERSTANDING (MOU)

SREE NARAYANA COLLEGE, CHATHANNUR
&
SREE NARAYANA INSTITUTE OF TECHNOOGY, VADAKKEVILA, KOLLAM

This Memorandum of Understanding (MOU) is constituted on 24.05.2021 between the Sree Narayana College, Chathannur affiliated to University of Kerala and Sree Narayana Institute of Technology, Vadakkevila, Kollam. The intention behind signing of MOU is meant to facilitate educational knowledge, teaching learning activities and training to offer career development activities and placement for the students of final year B.Sc & M.Sc Mathematics in Sree Naranyana College, Chathannur and for the students of Sree Narayana Institute of Technology, Vadakkevila, Kollam.

Purpose

This MOU between Sree Narayana College, Chathannur and Sree Narayana Institute of Technology, Vadakkevila, Kollam that will contour the collaboration in order to facilitate curriculum-based knowledge and training in Artificial Intelligence to offer career development and placement opportunities for the final year B.Sc & M.Sc Mathematics students within the specified time period as well as Mathematical aptitude training for the students of Sree Narayana Institute of Technology, Vadakkevila, Kollam.

Z. Mahalika

SUB TREASURY
03 FEB 2021
KOLLAM

No 32154 Rs.50/-
11.2.21

ഇരവിപുരം വെണ്ടർ
S.സുധീർ

S.N. കോളേജ് പത്തനൂർ

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Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

2. GENERAL TERMS OF MOU

2.1 Duration of MOU: This MOU shall be operational upon signing for conducting Artificial Intelligence course for final year B.Sc & M.Sc Mathematics students of the college and Mathematical Aptitude Training for Sree Narayana Institute of Technology students with a minimum duration of 2 years and can be extended based on outcome and benefits of the program by the mutual consent between two parties of MOU.

2.2 Course content: The course is designed as to cover the following contents : Python basics, programming constructs, data handling, machine learning algorithms and Google Colab for the students of Sree Narayana College, Chathannur and Objective type exam oriented Mathematical aptitude for Sree Narayana Institute of Technology students where both parties agrees and approves the curriculum and syllabus.

2.3 Coordination: In order to carry out and fulfil the objectives of MOU in a coordinated manner, both parties are required to appoint an appropriate person(s), to represent the activities and are necessary to conduct meeting between them if needed to discuss progress or other related matters of the course.

2.4 Confidentiality: The parties to the MOU agree that it shall not, at any time, after executing the activities of this MOU, disclose any information in relation to these activities or any other matters without consent of both parties.

2.5 Extension of Agreement: The MOU may be extended provided both the parties agree upon, and can provide the necessary resources after the minimum duration of the course.

2.6 Career growth and Placement: The MOU stands exclusively for educational purpose, career growth and placement of students as well. After the completion of course, Sree Narayana Institute of Technology should take an initiative to provide career prospects and placements opportunities for the students completing the course by informing placement drives and initiatives through email.

2.7 Termination: Either Party may unilaterally terminate this Agreement by providing written notice to the other Party at least thirty (30) days prior to the desired date of termination.

This MOU will take effect from the date of its signing and shall be valid for a period of 2 years from that date unless sooner terminated, revoked or modified by mutual written agreement between tile parties, and may be extended by mutual written agreement.

IN WITNESS WHEREOF, the parties to this Agreement have hereunto subscribed their respective hands by its authorised signatories on the date first above mentioned, in presence of the Witnesses.

Principal
Sree Narayana Institute of Technology
Vadakkevila
Kollam District
Kerala

Witness 1:

Dr. Sajeev J
Associate Professor & HOD
Dept. of MCA

SREE NARAYANA INSTITUTE OF TECHNOLOGY
KOLLAM-10

Principal
Sree Narayana College
Chathannur
Kollam District
Kerala

Witness 1:

Dr. Rani Rajeevan
Assistant Professor & HOD
Dept. of Mathematics

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Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

SREE NARAYANA COLLEGE, CHATHANNUR

DEPARTMENT OF MATHEMATICS

REPORT OF A WEBINAR ON WINNING EDGE

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Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

As part of our MOU, Dr . Sajeev J, Associate professor & HOD had given an online class on the topic "Winning Edge" for our final year UG & PG students. The objective of the class is to provide a platform to know about the basics of Python language & Artificial intelligence. The programme starts at 3 PM on 28.05.2021 and was conducted via Google meet. Smt. Ramsi Kundancheri , Assistant professor, Department of Mathematicsdelivered the welcome speech. Presidential address was delivered by Dr. Rani Rajeevan, HOD & Assistant professor, Department of Mathematics. The participants were actively involved at the interactive session. A total of 41 members were present in this session. The programme was concluded at 4.30 PM by the vote of thanks of kum. Sufiya N, III B.Sc Mathematics student.

To join the Webinar on Winning Edge, click this link:
https://meet.google.com/fte-ejxq-qpk

Or open Meet and enter this code: fte-ejxq-qpk

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Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

AI Quiz

Modern Computer Science?

a. Charles Babbage
b. Alan Turing
c. John McCarthy
d. Blaise Pascal

2. What is the name of the lifelike humanoid who has gained guaranteed citizenship of Saudi Arabia?

a. Rabecca
b. Sophia
c. Alan
d. Mansoor

3. Which is the subset of Machine learning inspired by biological neurons?

a. Artificial Intelligenc
b. Data Science
c. Big Data
d. Deep Learning

4. Who coined the term

Dr.Sajeev is presenting

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Reason: NAAC DVV
Location: Kollam, India
Date: 19-Jun-2023 (01:24 PM)

SREE NARAYANA COLLEGE, CHATHANNUR

DEPARTMENT OF MATHEMATICS

REPORT OF A WEBINAR ON MATHEMATICAL APTITUDE TRAINING - I

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Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM

As part of our MOU with SNiT, Vadakkevila, Kollam, Smt. Anjana S S, Guest Faculty in Statistics, Department ofMathematics, Sree Narayana College, Chathannur had given an online class on the topic "Mathematical Aptitude Training -I " for the final year BCA students of SNiT, Vadakkevila, Kollam. The objective of the class is to provide a platform to know about the shot cuts to solve some mathematical problems in competitive exams . The programme starts at 10.30 am on 03.12.2021 and was conducted via Google meet. The participants were actively involved at the interactive session. A total of 41 members were present in this session. The session came to an end at 12.00 pm.

Mathematical Aptitude TrainingFriday, 3
December · 10:30 am Google Meet joining info
Video call link: https://meet.google.com/cpt-hjpo-eio

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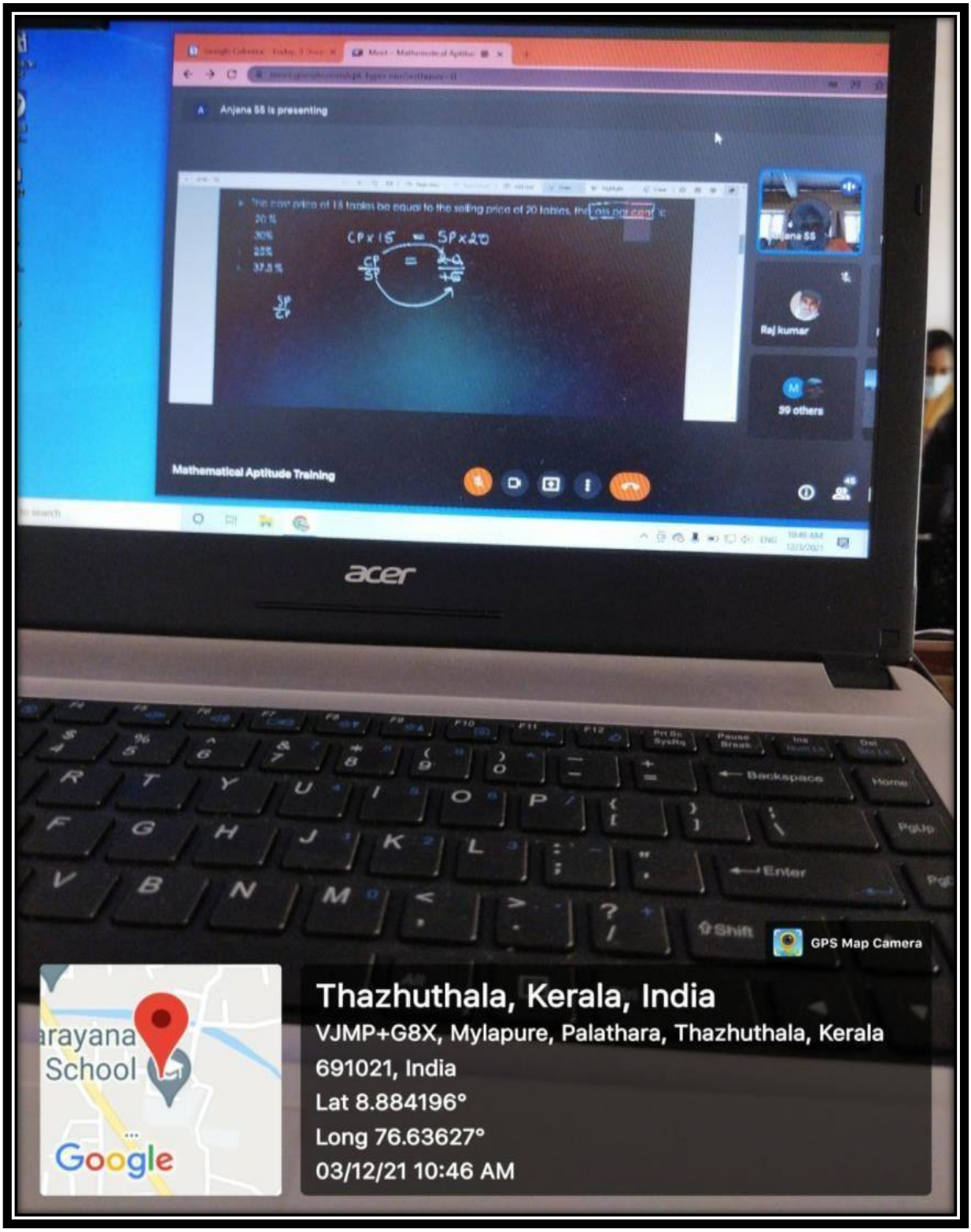

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Date: 09-Jun-2023 (01:24 PM)

SREE NARAYANA COLLEGE, CHATHANNUR

DEPARTMENT OF MATHEMATICS

REPORT OF A WEBINAR ON MATHEMATICAL APTITUDETRAINING - II

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Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM

As part of our MOU with SNiT, Vadakkevila, Kollam, Smt. Anjana S S, Guest Faculty in Statistics, Department of Mathematics, Sree Narayana College, Chathannur had given an online class on the topic "Mathematical Aptitude Training -II " for the final year BCA students of SNiT, Vadakkevila, Kollam. The objective of the class is to provide a platform to know about the shot cuts to solve some mathematical problems such as age related problems in competitive exams. The programme starts at 11 am on 06.06.2022 and was conducted via Google meet. The participants were actively involved in the problem solving session. A total of 64 members were present in this session. The session came to an end at 12.30 pm.

Mathematical Aptitude Training - IIGoogle Meet

joining info

Video call link: https://meet.google.com/zyu-bpxg-gwh

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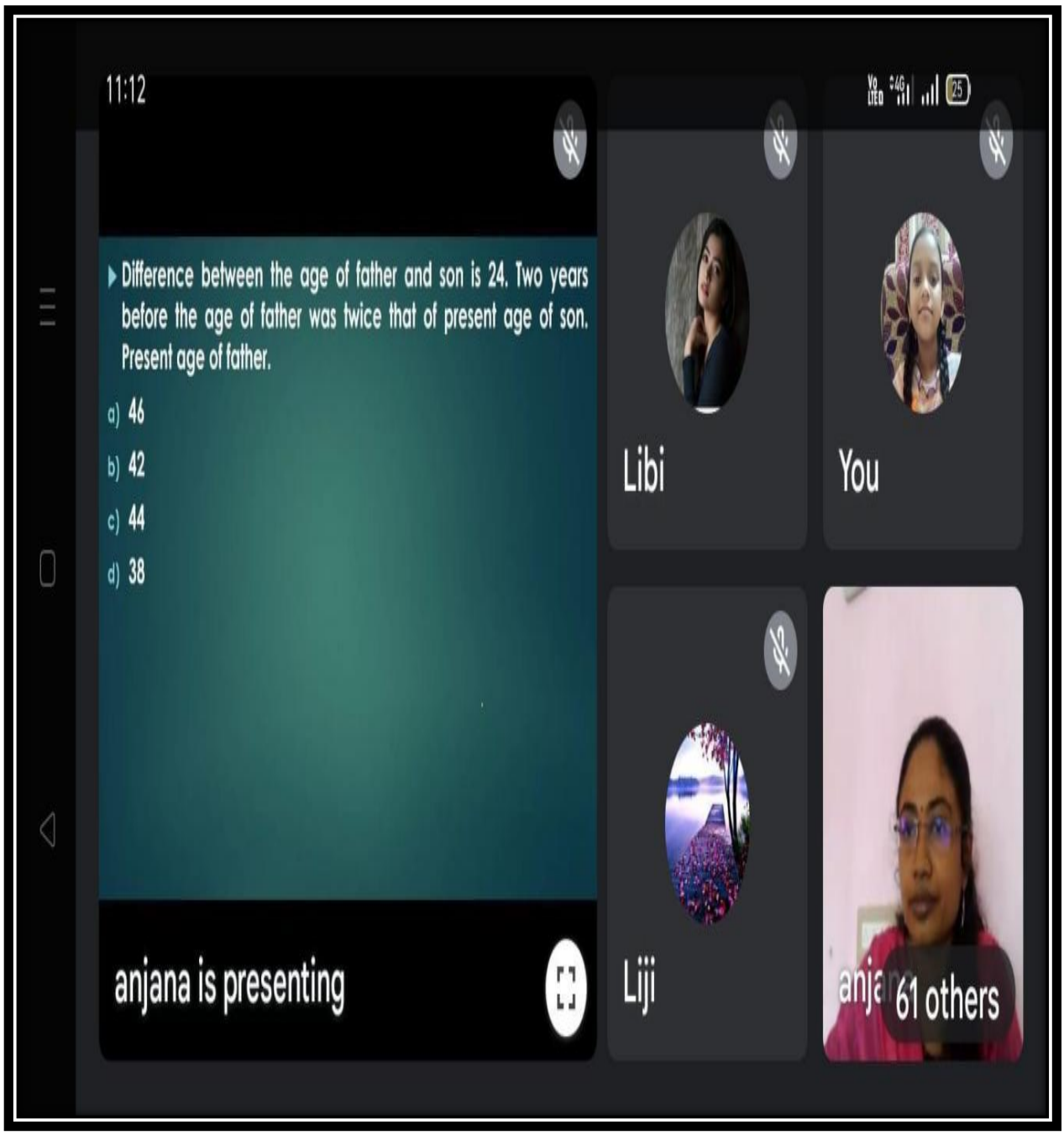

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SREE NARAYANA COLLEGE, CHATHANNUR

DEPARTMENT OF MATHEMATICS

REPORT OF A WEBINAR ON

MACHINE LEARNING USING PYTHON AND GOOGLE COLAB

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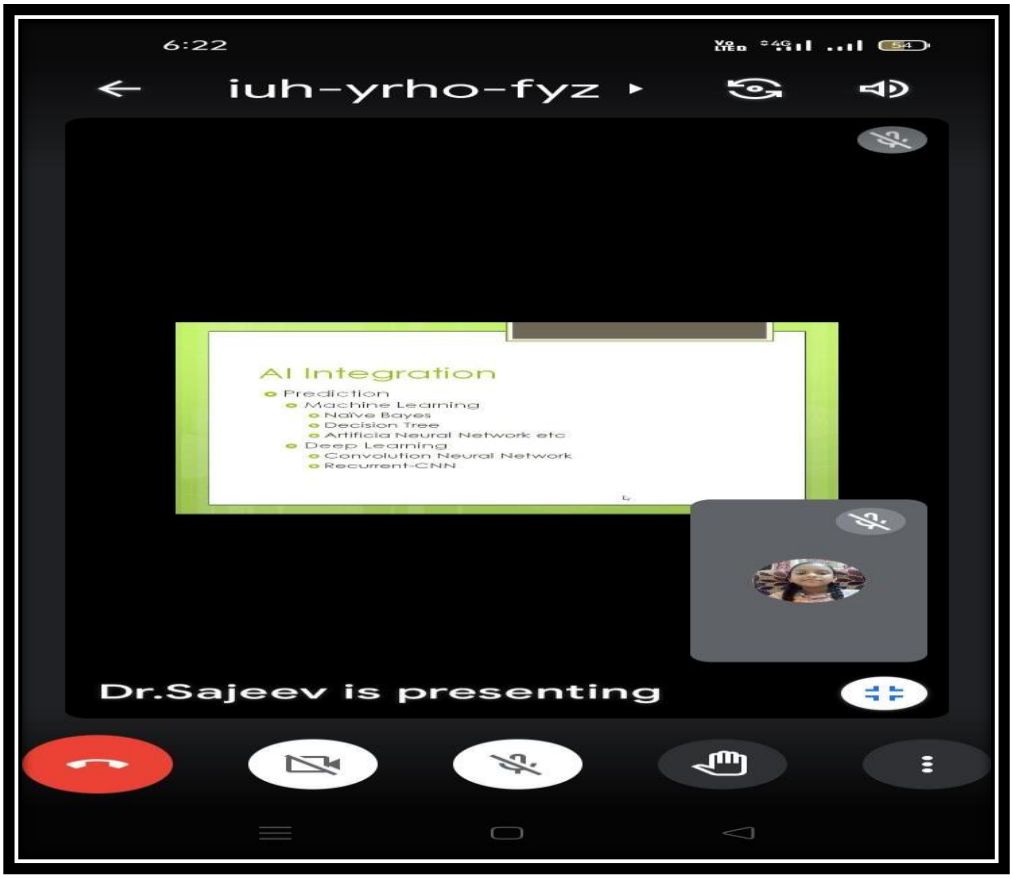

The Post Graduate Department of Mathematics conducted a webinar on "Machine Learning Using Python and Google Colab" on 24th December 2022 at 6.00 PM via Google meet. As part of our MOU, Dr. Sajeev J, Associate professor & HOD, Department of Computer Science ,SNIT, Vadakkevila, Kollam,had given an online class on the topic for our final year UG & PG students. The session introduced the usage of Google Colab platform for learning and quickly developing machine learning models in Python. Dr. Rani Rajeevan, HOD & Assistant professor, Department of Mathematics delivered the welcomespeech. Presidential Address was delivered by Dr. Latha M S, Principal, S N College Chathannur .The Participants were actively involved in the interactive Session. A total of 17 members were present in this Session. The programme was concluded at 7.30 PMby the Vote of thanks of kum. Parvathy M, III B.Sc Mathematics Student.

Google Meet link: https://meet.google.com/iuh- yrho-fyz Or open Meet and enter this code: iuh- yrho-fyz

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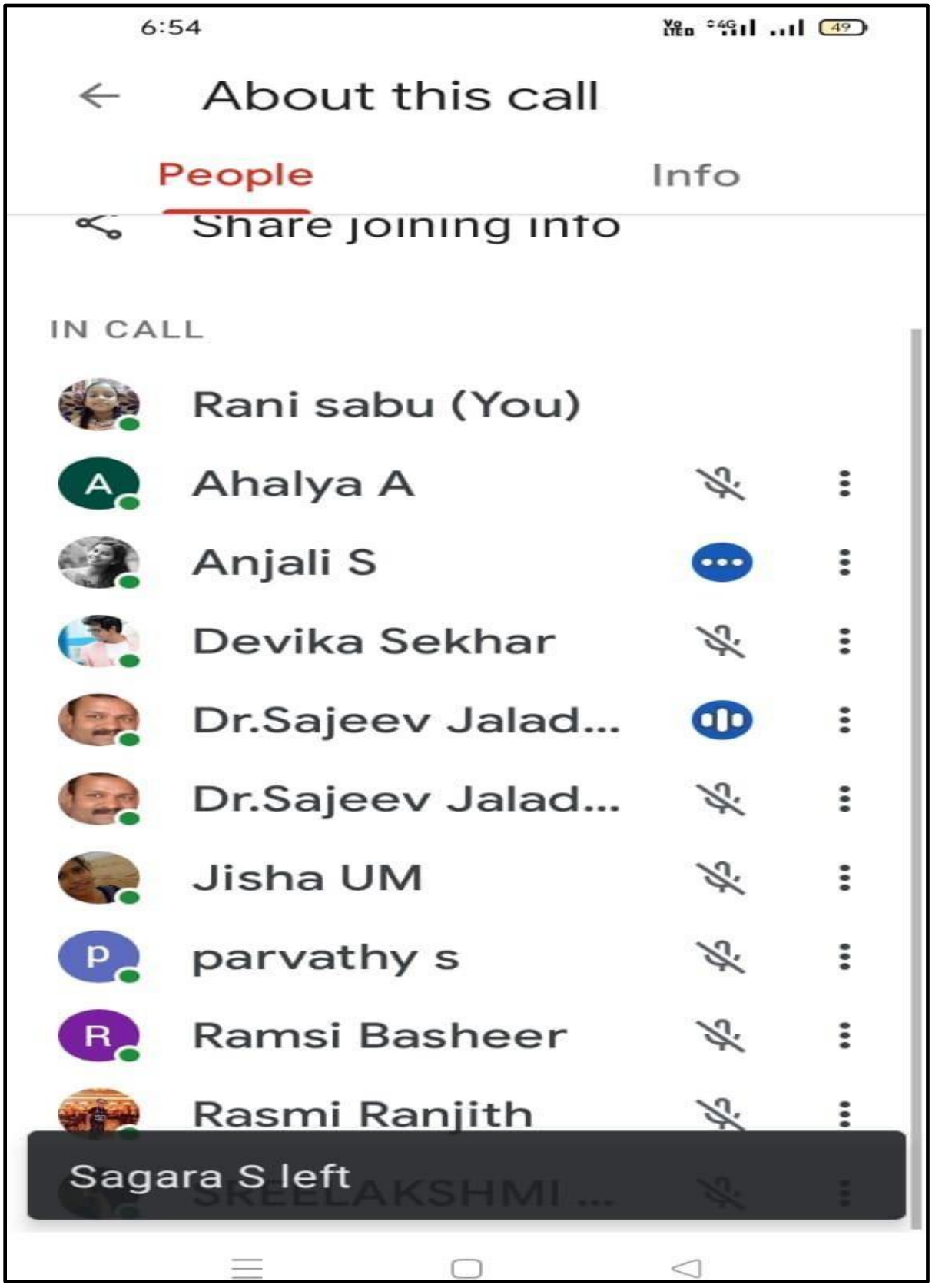

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Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

DIPLOMA COURSE IN MOLECULAR DOCKING

MEMORANDUM OF UNDERTAKINGS

2020-21

(An UGC approved Skill based Diploma course under National Skills Qualification Framework(NSQF))

भारतीय गैर न्यायिक

पचास रुपये रु.50

भारत

FIFTY RUPEES Rs.50

सत्यमेव जयते

INDIA

INDIA NON JUDICIAL

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BZ 559504

MEMORANDUM OF UNDERSTANDING(MOU)
Sree Narayana College, Chathannoor
&
Accubits Technologies Pvt. Ltd.

For the inclusion of software package in college for collaborative usage of the College and Accubits Technologies Pvt. Ltd.

This document constitutes an agreement between Principal,Sree Narayana College, Chathannoor, Kollam District, Kerala and Accubits Technologies Pvt. Ltd. with regards to the installation of a software package (Discovery Studio version/Schrodinger) in the college for collaborative usage of the college and Accubits Technologies

1. OBJECTIVE

The general objective behind this Memorandum of Understanding (MOU) is meant to detail the modalities and general conditions incorporated between Principal, Sree Narayana College, Chathannoor and Accubits Technologies Pvt. Ltd. in order to stimulate and facilitate the development of collaborative and mutually beneficial programs by installing the software package with collaborative research with the company and educational purposes of the college for serving to enhance the knowledge and technological upgradation and to improve employability skills among students and thereby provide enormous employment opportunities to the society. Thus,Principal, Sree Narayana College, Chathannur, and Accubits Technologies Pvt. Ltd. have expressed their willingness to cooperate and support each other for the installation of software packages in College for their mutual interest in their respective fields.

Number 4592 Rs 50/-
Date 15-07-2020
Dr. Lalhu. M.S
Principal SN College

G. UNNIKRISHNAN
STAMP VENDOR
KOLLAM SPECIAL LICENSE

DISTRICT STAMP

14 JUL

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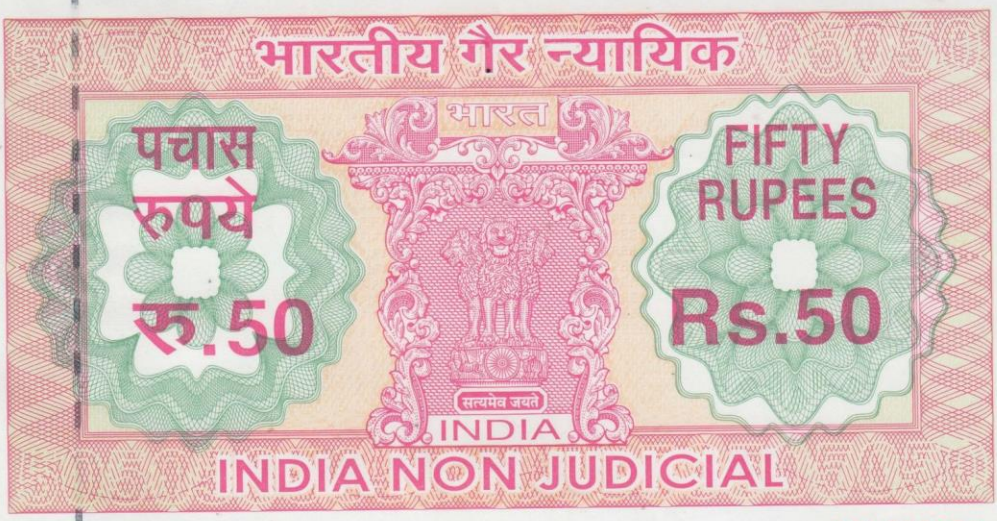

കേരളം केरल KERALA BZ 559505

The Specific activities framed and incorporated in MOU are dealt in accordance with consultation between the two parties.

Accubits Technologies Pvt. Ltd. agrees to purchase and later install the software package in the computer lab of Sree Narayana College, Chathannurand agrees to provide education-oriented programs, practical and training classes as well as technical assistance to the students which may improve the knowledge power, employability, and competitive skills among them.

2. **GENERAL TERMS OF MoU**

2.1 Duration of MOU: This MOU shall be operational upon signing and will have a duration of a minimum of two years and can be extended based on the outcome and benefits of the program by the mutual consent between the two parties of MoU.

2.2 Timing of program access: The college/students shall have access to the software package during working hours of the college whereas the company can utilize and access the installed software package for their purposes without any restrictions whatsoever after the regular working hours. During working hours, if the need may arise, the company shall be given access without any clash with classwork and with prior notice to the head of the institution. During holidays the company can access the installed software with prior notice to the head of the institution. In order to facilitate software access, internet connectivity, power availability and remote access shall be provided at all times to the installed system by the college.

2.3 Coordination: In order to carry out and fulfill the objectives of MoU in a coordinated manner, both parties are required to appoint an appropriate person(s) to represent its organization and to coordinate the implementation of activities and have to conduct meetings between them if needed to discuss progress and plan activities.

Number 4593
Date 15-07-2020 Rs 50/-
Dr. Leelha. M.S
Principal, SN College
Chelthannoor.

G. UNNIKRISHNAN
STAMP VENDOR
KOLLAM (SPECIAL LICENSE)

DISTRICT STAMP DEPOT
14 JUL 2020
KOLLAM

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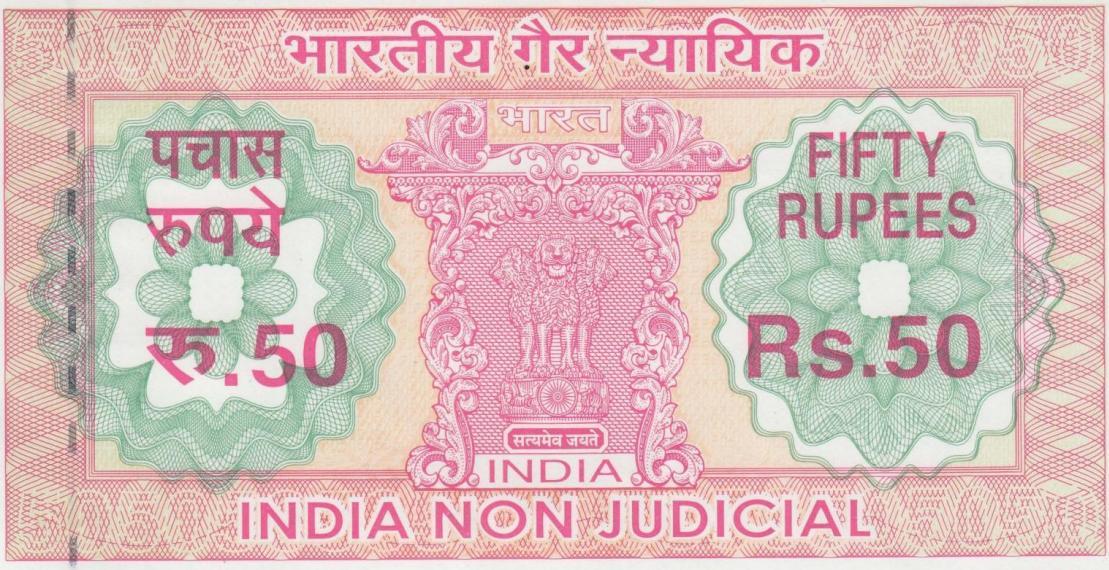
Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)



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2.4 Confidentiality: The parties to the MoU agree that it shall not, at any time, after executing the activities of this MOU, disclose any information in relation to these activities or any other matters without the consent of both parties.

2.5 Research publication/patent: The parties agree that any publication arising from the use of the software shall include the names of, to a minimum of one representative from each party in the author list. Also, the company can go for the filing of a patent application (in its name) in case it finds a lead in its independent research activity. Moreover, the company has the right to commercialize any product it comes across its research without further intervention from the college.

2.6 Extension of Agreement: The MOU may be extended provided both the parties agree upon and can provide the necessary resources.

This MoU will take effect from the date of its signing and shall be valid for a period of 3 years from that date unless sooner terminated, revoked or modified by mutual written agreement between tile Parties, and may be extended by mutual written agreement.

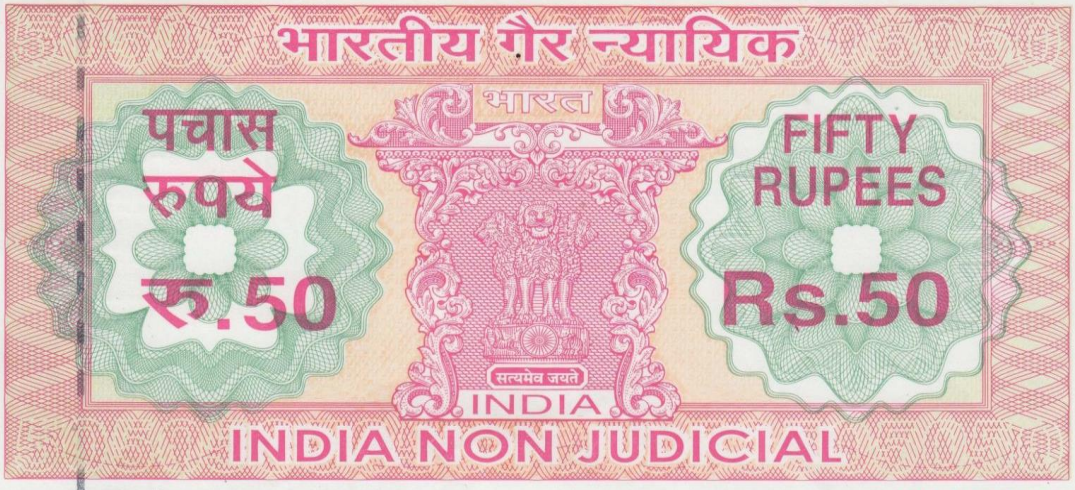
Number 4594 Rs 50/-
Date 15-07-2020

G. UNNIKRISHNAN
STAMP VENDOR
KOLLAM SPECIAL LICENSE

DISTRICT STAMP DEPOT
14 JUL 2020
KOLLAM

Dr. Latha. M.S
Principal, SN College, Chathannoor,

Signed by: AMJITH S
Reason: NAAC DVV
Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)



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Either party may terminate the Agreement at any time during the term by the provision of three months' written notice to the other party.

14/7/2020
Chathannur

Dr.Nidhin Sreekumar,
Director, Accubits Invent Pvt. Ltd.
The Pirate Square,
Kulathoor,
Thiruvananthapuram
Kerala.
695004.

Principal,
Sree Narayana College,
Chathannur,
Kollam District,
Kerala.

Number 4595 Rs. 50/-
Date 15-07-2020
Dr. Latha. M.S
Principal, SN college, Chathannoor.

G. UNNIKRISHNAN
STAMP VENDOR
KOLLAM (SPECIAL LICENCE)

DISTRICT STAMP DEPOT
14 JUL 2020
KOLLAM

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Location: Kollam, India
Date: 09-Jun-2023 (01:24 PM)

DIPLOMA COURSE IN MOLECULAR DOCKING

2020-21

(An UGC approved Skill based Diploma course under National Skills Qualification Framework(NSQF))

Report:

Department of Chemistry, Sree Narayana College Chathannor has well-coordinated and successfully consummated its UGC approved one year Skill based Diploma Course (under National Skills Qualification Framework (NSQF), sanctioned to the college in the year 2020. This skill-based program was intended to provide basic expertise to students in computational drug discovery process, starting from CADD fundaments to drug approval process. Course was designed in a such way to cover all the recent developments in the field of CADD and included training sessions in various molecular modelling techniques and in computer aided drug design. The hands-on practise sessions included in this course equipped the students to handle various drug docking tools. This diploma course was inaugurated by Dr. Achuthsankar S. Nair, Professor and Head, Department of computational Biology and Bioinformatics, University of Kerala on 10/03/2020 with an introductory talk "Molecular Docking". A total of twenty-three students enrolled for this programme and the classes were handled by the faculties in chemistry department of this college and our industrial collaborators Accubits Technologies Inc. Due to covid pandemic situation we had to postpone some of the training sessions which necessitated lab facilities and hence got lagged and extended till college reopen. After the successful completion of the course, students were given the course completion certificate.

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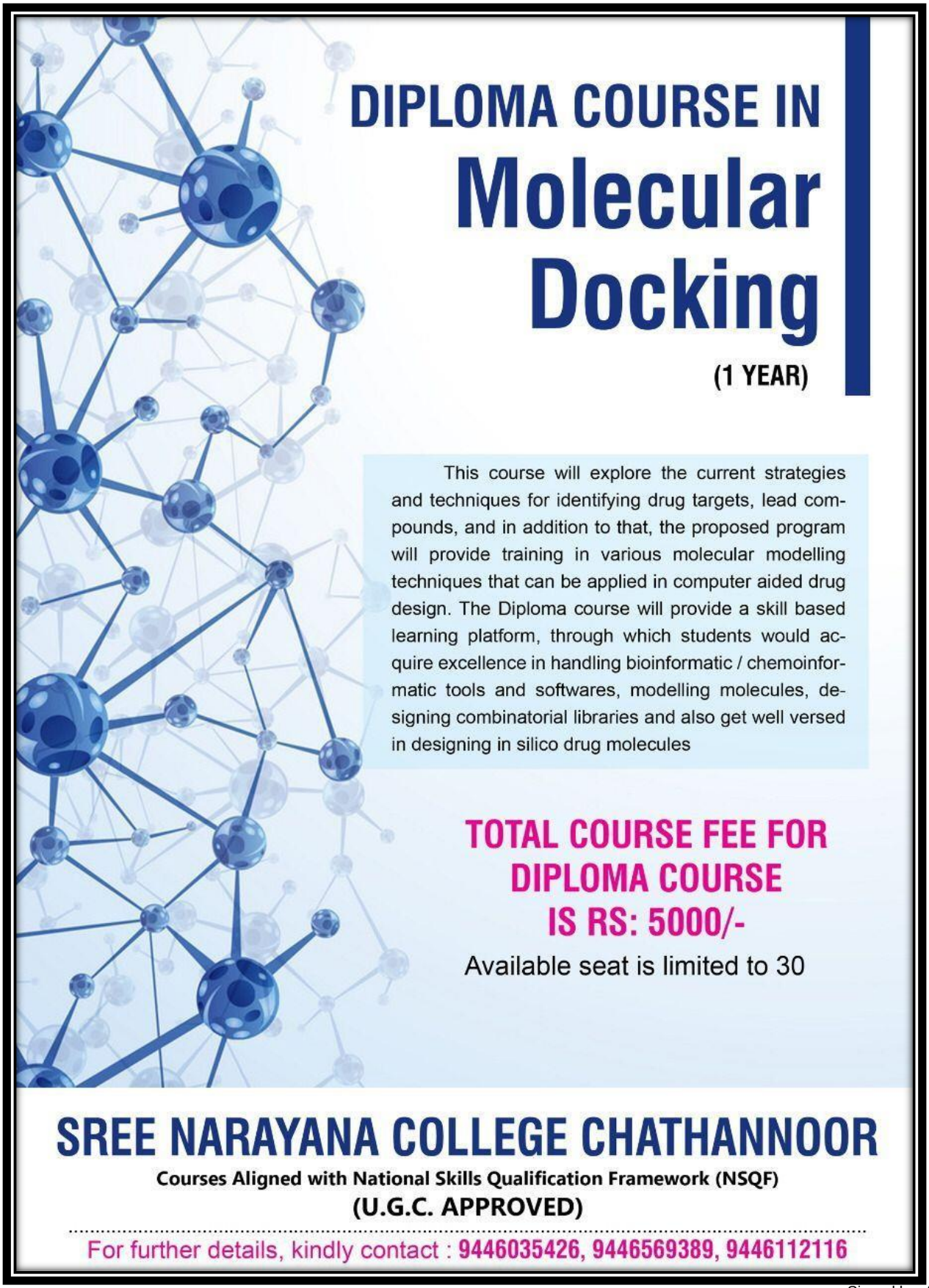

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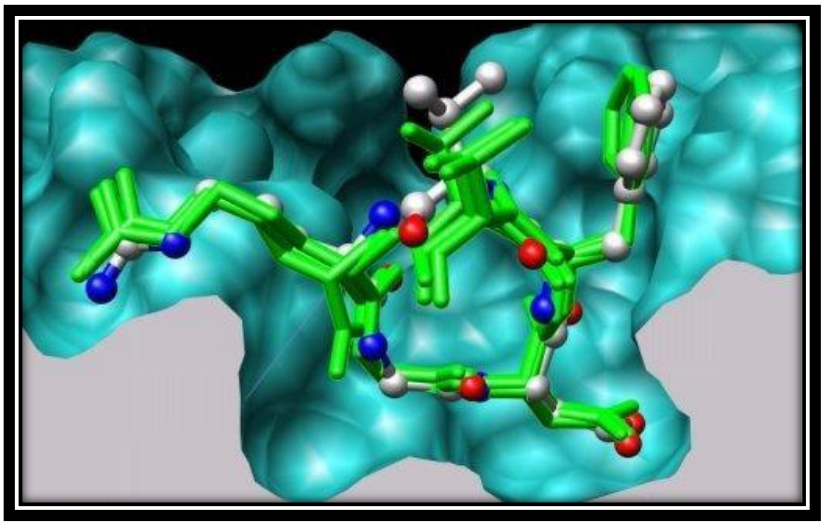
SKILL BASED DIPLOMA COURSE IN MOLECULAR DOCKING



This Diploma program in Molecular Docking aims to provide basic expertise in drug discovery process, starting from CADD fundaments to drug approval process. This course will explore the current strategies and techniques for identifying drug targets, lead compounds, and in addition to that, the proposed program will provide training in various molecular modelling techniques that can be applied in computeraided drug design. The hands on practise sessions included in this course will equip the student to handle drug docking tools and software and the students will learn to design combinatorial libraries. The course will also cover the procedural practises in getting approval for newly designed drug and patent acquiring formalities

Scope:

The Diploma course will provide a skill based learning platform, through which students would acquireexcellence in handling bioinformatic/chemoinformatic tools and softwares, modelling molecules, designing combinatorial libraries and also get well versed in designing in silico drug molecules.

COURSE OBJECTIVES: On course completion the student will;

1. learn basic concepts of drug docking
2. get introduced to various biological and chemical databases
3. get familiarise with bioinformatics and chemoinformatics tools
4. gain expertise in molecular modelling

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5. learn various techniques in *insilico* virtual screening & its protocols
6. get exposure in CADD through case studies and hands on practises

BACKGROUND

Biology has undergone a transformation from its traditional ethos to that of an information science. Currently, a lot of work in life sciences is centeredaround biological databases, mainly genomic and proteomic. Many of the tools and tech-niques of biology have been reborn with aninformational flavor. A typical example is that of phylogenetics. The classification of species basedon phenotype (external characteristics) is now recognized as being highly subjective. Its place hasbeen taken by a classification that is based on genotype (genetic makeup).

As the whole world is facing the Covid 19 pandemic, it is imperative that the higher education institutions explore avenues to impart knowledge and skills that are of relevance to it. Moleculardocking is an important skill in the field of modern drug design and development which is being applied the world over,in the hope of discovering a potent molecule that can arrest target molecules of Covid 19. Students of higher education in the field of Chemistry and allied branches such as biochemistry and biotechnology will benefit by training in this area, both in terms of research and innovation, as well as enhanced employability in pharma sector. This proposal has been evolved in this backdrop. A 6 month certificate course in Molecular Docking has been designed by the college.

INDUSTRIAL RELEVANCE OF DRUG DOCKING

Identifying a disease and bringing out an effective drug into the market could take anywhere from 10–15 years, cost up to US$800 million, and involve testing of up to 30,000 candidate molecules. The economic significance of the activity thus needs no special emphasis. This costly,time-consuming activity has been traditionally based on a blind search for molecules, rightly termed as serendipitous discovery. Computer aided drug design or rational drug design has cut the cost and time of drug discovery with great effect. Today computationally it is possible to select candidate drug molecules from huge available databases and check whether it can bind tothe active site of the troublesome molecule using computational docking procedures.

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Drug Docking: Tools and Techniques

Computer aided drug design is the use of computational techniques to cut down the search for drug molecules. A large class of diseases arise out of an unwelcome molecule, possibly a protein produced from the gene of a pathogen, an intruder organism, like a virus. A simplified picture of diseases could be given based on "good" and "bad" proteins. The human body can be assumed to be producing proteins P1, P2, P3 ... that are useful and required for the human body. When a pathogen, a virus or a bacteria, enters the human body, it could produce its own protein, say X, which is possibly harmful. How exactly is it harmful? X could interact and form a complex, in which two molecules are bound together into a new one, with one of the good proteins, say P1, thereby inhibiting it from its routine activities and causing the onset of a disease. The strategy to combat the disease is to introduce a new molecule, say Y, into the body such that X is more attracted to Y than to P1, thereby freeing P1 to get back to routine work. It must be noted that all diseases do not fit into this model. Sometimes, our own protein-making machinery can go wrong and produce P1' instead of P1, causing disease.

Docking software such as Hex, Argus Lab, and Autodock (Open Source) are capable of docking the small molecules to selected active sites of target molecules and give a relative score for the binding. The small number of (a few dozen) of molecules thus predicted computationally is thenpassed on to the wet lab for synthesis and clinical trials. Licence softwares are also available.

Curricula and Credit System for the course:

Total credits	***60***
Credits for Skill development Component (70%)	***42***
General Education (30%)	***18***

Total number of students enrolled in the programme: 23

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Syllabus

Skill Development Component: (Credits: 42)					
Course Curriculum : Molecular Docking					
	Course Content	**Credits**		**Hours**	
	Course content	**Theory**	**Lab**	**Theory**	**Lab**
Module I	**Introduction to Computer –Aided Drug Design:**Concept and basic terminologies of Computer-Aided Drug Design, Target, hit , lead, optimization, docking, pharmacophore-Informatics & Methods in drug design; Introductionto genomics, proteomics, Bioinformatics, chemoinformatics, combinatorial chemistry.-Role of chemoinformatics in drug discovery. Pharmacology , reverse pharmacology, toxicology, ADME databases, chemical, biochemical and pharmaceutical databases.Drug Discovery pipeline	**6**	**1**	**6**	**2**
		Credits: 7		**Hours: 8**	
Module II	**Molecular Modelling and docking:** Introduction, Molecular Dynamics of simple molecules, structure predicting tools, homology modelling, Ab Initio modelling, protein 3D structure prediction, Modelling softwares, energy minimization techniques, Ramachandran plot, Fold recognition.	**6**	**2**	**6**	**4**
		Credits: 8		**Hours: 10**	
Module III	**Drug targets and molecules:** Drug Molecules, Mechanism of Drug Action; Drug like compounds, Prediction of drug toxicity, Small Molecule Data bases and	**6**	**2**	**6**	**4**

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	representation of Drug molecules; QSAR, pharmacophore mapping				
		Credits: 8		**Hours: 10**	
Module IV	**Various approaches in drug design**:rational drug design, Structure based drug design, Ligand based Drug Design, drug bindingmechanisms, virtual screening, Docking and scoring, Docking methods-preparation of molecules, Combinatorial library design. sampling techniques, scoring, erros in docking, drug target selection, Lead compound discovery and optimization, The role of quantum mechanics in structure-based drug design, Drug receptor interactions, Checking ADME properties in drug design, hands on experience in docking softwares	**9**	**2**	**9**	**4**
		Credits:11		**Hours: 20**	
Module V	Case study of docking of small molecules with Covid 19 targets	**8**		**16**	
		Credits: 8		**Hours: 16**	
		Total Credits: 42		**Total Hours: 64**	
General Education course content(Credits: 18)					
Module I	Intellectual property Right(IPR), copyright, patent, patent filing, Ethics of drug testing in animals and humans, Drug marketing, Pharma Industry	**9**		**9**	
Module II	Environmental studies, Valueeducation, ICT skills, how to acquire critical thinking, problem solving skills	**9**		**9**	
		Total Credits: 18		**Total Hours :18**	

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Sree Narayana College, Kollam
Re-Accredited by NAAC with "A" Grade
Affiliated to the University of Kerala
Kollam - 691 001, Kerala, S. India
Tel : 0474 - 2741793, Fax : 0474-2766857
website www.snckollam.ac.in e-mail : snckollam@gmail.com

Dr. Sunilkumar R.
M.A, M.Phil., Ph.D
Principal
Mob No.: 9387500997
Email : sunilanena@gmail.com

Ref: G3/ 7832 2021/

Date 10/12/2021
10/12/2021

CERTFICATE

This is to certify that Dr. Rani Rajeevan, Assistant Professor, Department of Mathematics, Sree Narayana College, Chattanoor had engaged classes for S3 M.Sc Mathematics students of our college via online platform during the academic year 2020-2021 as part of our collaborative work with S N College, Chattanoor

PRINCIPAL
Principal
Sree Narayana College
Kollam

established in 1948

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