
MANGALORE UNIVERSITY
DEPARTMENT OF BIOSCIENCES
MSc BIOTECHNOLOGY

BTS 553 REGULATIONS AND INTELLECTUAL PROPERTY RIGHTS

Hours:40

Course outcome

The students will be able to learn:

- General guidelines and bio safety practices for recombinant DNA research
- Protection and registration of new plant varieties and plant germplasm conservation
- General agreement on trade and tariff, use of traditional knowledge digital library i.e ayurvedic and unani medicinal plants
- Farmers rights and plant breeders rights.

UNIT I (13 hrs)

Biosafety and research: General guidelines for recombinant DNA research activity. Containment facilities and biosafety practices; Rules for import and export of biological materials. Biological warfare and Bioterrorism.

UNIT II (13 hrs)

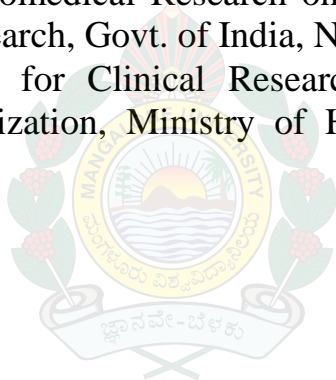
CBD, GAAT, TRIPs, Plant variety protection, International Union for the Protection of new Varieties of Plants (UPOV), plant protection act, registration of new varieties, rights and obligations, farmer's rights; traditional ecological knowledge. Traditional knowledge digital library (TKDL). Plant germplasm conservation, characterization and documentation. Seed certification (laws, regulations and standards), seed patent law.

UNIT III (14hrs)

Intellectual property rights (IPR) (meaning, classification and forms), importance of IPR in Science and Technology. Patents, patenting procedures, patent applications and patenting laws; Biopiracy. Patent-related litigations and controversies (neem, basmathi rice, turmeric). Salient features of Indian Patent Law.

References

1. Biotechnology, Biosafety and Biodiversity. Shantharam, S. & J.F. Montgomery. Science Pub., 1999
2. Biotechnology. Rehm H.-G.& G. Reed, Wiley Blackwell Pub., 1983
3. Biotechnology and the Law: IPR Vol.1 & 2. Cooper, I.P. Clark Boardman Co., 1989
4. Ethical guidelines for Biomedical Research on Human participants, Indian Council for Medical Research, Govt. of India, New Delhi, 2006
5. Good Clinical Practices for Clinical Research in India, Central Drugs Standard Control Organization, Ministry of Health and Family Welfare, Govt. of India, 2013



Manipal BioTech



Registration
closes
at

5pm

July
13th
2021

Organized By:



**MANIPAL-GOK
BIOINCUBATOR**

(Supported by KITS, Government of Karnataka, DBT - BIRAC and MAHE, Manipal)



MANIPAL SCHOOL OF LIFE SCIENCES

MANIPAL

(A constituent unit of MAHE, Manipal)

1) What is Manipal BioTech Hackathon '21?

Manipal BioTech Hackathon '21 is a week-long virtual Hackathon conducted to solve real problems in the Biotech Domain.

2) Who is Organizing?

Manipal- Government of Karnataka Bioincubator & Manipal School of Life Sciences (MSLS), MAHE, are jointly conducting this Hackathon.

3) How will it be conducted?

Manipal BioTech Hackathon '21 will be through Microsoft Teams.

4) When will it happen?

July 16, 2021 (Friday): Manipal Biotech Hackathon '21 commences at **11 am**, followed by Brainstorm, concept development for working prototypes with critical features, business plan development, etc., for a week.

July 21, 2021 (Wednesday): Submitting your final proposal and business plan of the solution to the Organizers by 5 pm. A panel of judges will review the proposal and business plan followed by the shortlist of the best teams for the final round.

July 23, 2021 (Friday): Present the business plan to the expert jury.

5) Who can Participate?

Students/researchers pursuing UG/PG/Doctoral Studies.

6) How to Register?

Registration Link: <https://tinyurl.com/3tfn67zn>

7) How to Register as a solo participant?

You cannot join the competition as a solo participant, the minimum number is 2. However, you can roll in yourself under **TEAMMATES LOOKOUT:** <https://tinyurl.com/m8btbc9k>

8) What are the Fees and prizes?

The teams are required to pay non-refundable fees of **INR 800**. All teams submitting proposals and business plans will get certificates of recognition. The best teams will get a cash prize from the total pool of **INR 35,000** and pre-incubation support, a chance to win EIR funds, and a seed fund up to **INR 25 Lakhs**.

9) What is expected and what are the problem statements?

Participants need to develop their concept to Proof of Principle or TRL 2 stage. The participants can either pick from the problem statements curated by the organizers or can choose their own problem statement. The link to the curated problem statement <https://tinyurl.com/utkurpue>

10) When is the deadline?

13 July 2021, 5 PM. Kindly click here for the complete document of the Rules and Regulations of the event <https://tinyurl.com/5cn5kd7s>

Team Register

**Your own or Choose
from the Given
Problem Statements**

**Brainstorm & Create
Prototype with
Working Features**

**Present & Win Prize
Upto INR 35,000**

Registration Fee Per Team : INR 800/-

Manipal BioTech Hackathon '21

**GRAND FINALE:
23rd July 2021**

Organized By:
Manipal- Government of Karnataka Bioincubator & Manipal School of Life Sciences (MSLS)

For More Details Contact:
bioincubator@manipal.edu | Ph: 08202937726, 8884931461

**PRIZES UP TO INR 35,000 & SEED
FUNDING UP TO 25 LAKHS TO BE WON**

For Registration click on the link given below:

<https://tinyurl.com/3tfn67zn>

Or Scan QR Code

Registration close at 5pm July 13th 2021



Manipal BioTech Hackathon '21

Manipal - Government of Karnataka BioIncubator & Manipal School of Life Sciences, Manipal Academy of Higher Education (MAHE), Karnataka

16 - 23 July 2021

Problem statement

1. Neglect of Crop rotation or cropping pattern – alternate C3 and C4 plants

Food crops such as food grains, sugarcane and other beverages and non-food crops such as fibres and oilseeds make an array of cropping patterns. Depletion of nutrients of one crop can be made up by alternating growing other crops at the same place on a rotational basis. Knowledge of specific crop rotation may help to maintain the fertility of the soil with minimum efforts and consistent yield. Another strategy is to grow C3 and C4 plants alternatively to contribute to control climate change.

2. Seed quality analysis

Post-harvesting seeds and their optimum germination in another cycle is key to success in farming. Seed quality can change due to several reasons. These can be physical or physiological. Identifying these and mitigating the same can improve the success of farming, including overcoming seed infections.

3. Soil nutrient analysis

Soil nutrient analysis is key to determine the use of natural or artificial fertilizers for farming. Soil nutrient analysis can also determine the extent of the crop yield. A systematic evaluation of all the factors and identifying solutions with new technologies will help in the successful agricultural practices.

4. Programing plants for Tolerance to Abiotic Stresses

Abiotic stresses is one of the factors that significantly limit crop production worldwide with an average 70% reduction, mainly drought, salinity, etc. Programing plants to improved stress tolerance to improve agricultural production using the unutilized lands where soils are nutrient-rich and shift in rainfall patterns.

5. Increase the shelf life of fruits and vegetables & Postharvest Processing.

Food waste and loss is an important issue worldwide with 20% of dairy products, 30% of cereals, 20% of oilseed and pulses, 20% of meat, 45% of fruits and vegetables, 35% of fish and seafood, 45% of roots and tubers are lost or wasted. Biotech intervention to decreasing postharvest losses to ensure food supply, the efforts without losing the natural benefits of fruits and vegetables through innovative solutions focused on the real problems of Ethylene exposure, Temperature changes Humidity/moisture, Microbial growth, Physical harm, respiratory rate control and Packing materials.

6. Rapid detection of bacterial and fungal infections in plants.

Infections are detrimental for successful cropping practices. Infections can differ during various stages of growth and at different parts of the plants. These will have a significant impact on the crop yield. Identification of microbial infection early that can destroy the plants will facilitate its eradication for better yield.

Manipal BioTech Hackathon '21

Manipal - Government of Karnataka BioIncubator & Manipal School of Life Sciences, Manipal Academy of Higher Education (MAHE), Karnataka

16 - 23 July 2021

7. Identification of food adulterants.

The current estimate of more than two million people, including children, face fatality due to the consumption of unsafe food and impure water annually. The different forms of food adulteration with diverse forms and chemical combinations without direct tracing affect the food integrity and authenticity in developing countries. The need for proper identification of all sort of food adulterants qualitatively or quantitatively becoming a global challenge today with at least a gold standard. Many technologies currently using are below slandered and false positives cases. The global consumers are waiting for the high throughput technologies for accurate identification of food adulterants, through biotech Innovation.

8. Vaccine candidates.

The development of vaccines by conventional methods for a specific pathogen is labor intensive, time consuming, poor immune responses, need of adjuvants, and susceptibility to enzymatic degradation and expensive. It also has high failure rate and becomes trickier for those organisms that cannot be cultured in the laboratories. Novel vaccine development strategies to overcome the shortcomings of traditional vaccines candidate through advancement in computational biology for screening vaccine candidates from the genome of a pathogen for the prediction of antigenic peptides for successful development is to develop vaccines.

9. Drugs from plants for infectious microorganisms.

The microbial resistance to classical antibiotics and its rapid progression has raised serious concern in the treatment of infectious diseases. The phyto compounds have exerted potential antimicrobial activities against a large number of pathogens via different mechanisms of action. Plants hold great promise as a source of novel antimicrobial agents, currently large number of database available for phytochemicals, but the limitation is developing a novel therapeutic screening platform to predict the antimicrobial activity of phytochemicals.

10. Targeting microorganisms as antifouling agents

The problem of biofouling by the undesirable colonization of surfaces by fouling organisms, including micro-organisms and macro-organisms cause huge material and economic loss. Currently, other toxic and non-targeted chemicals are used as coatings. Microorganisms are identified as a novel source for antifoulants mainly by its bioactive secondary metabolites.

11. Microorganisms for bioremediation

Today, environmental pollutants are one of the primary concerns all over the Globe, which in turn affects human health. The Domestic and industrial waste generated with non-degradable pollutants progressively deteriorate the environment, and current technologies are insufficient to clean up the vast mass of trash. The individual or consortia of microorganisms are considered to remediate the pollutants at the lab scale using their biochemical and enzymatic interaction. The development of innovative technology, with programmable microbial process potentiality for rapid biodegradation, need to develop with big data of biology (microbial genomics, proteomics, systems biology, computational biology, and bioinformatics) with controlled biodegradative pathways.

Manipal BioTech Hackathon '21

Manipal - Government of Karnataka BioIncubator & Manipal School of Life Sciences, Manipal Academy of Higher Education (MAHE), Karnataka

16 - 23 July 2021

12. Cell factories –The single-cell programmed differentiation artificial red blood cell

The demand for blood transfusion remains high in surgical interventions and other hematologic malignancies, and there is an imbalance in blood demand and supply. Can we create a roadmap for how specific features of genomic architecture determine the programmed differentiation of stem cells to RBC. The possibility of utilizing pluripotent stem cells to transform into RBC for therapeutic purposes with less ethical concerns.

13. Nanobubbles application for plant and human cells – take an example

Micro- and nanobubble (MNB) technology is an emerging technology to solve multi domain problems, an effective alternative for current treatment technologies. It proves a wide level of applications in agriculture, Industry, environmental, water recycling, the therapeutic potential of the nanobubbles in reverting hypoxic tumour regions, targeted drug delivery, material sciences etc.

14. Stem cells for infectious diseases

The multipotent mesenchymal stem cells currently focused by innovators for its therapeutic impact due to the immune-modulatory effects, through a variety of bioactive factors, which actively contribute to mitigate with tissue damage, inflammation, and infection associated with bone, cartilage, lungs, pancreas, the central nervous system, the gastrointestinal track, and the circulatory system. The MSCs enhance the remodelling of diseased body parts, regulate the immune system, enhance treatment by inducing angiogenesis or blood vessel development, be chemotactic, and induce cellular recruitment. Novel therapy needs to develop utilizing the potential of MSCs differentiation process depends on the environment and using the active communication between the newly administered cells host tissue.

15. Biofuels

Biofuels offer an excellent alternative for fossil fuels and currently contributing in a small amount to the growing global demand, and biological alternative sources of renewable energy exploration are the need of this hour. Biochemical and Bioinformatics understanding and analysis of energy-generating pathways across the three-domain of life with the support of current scientific knowledge may lead to unlocking the mysteries of alternate fuels. Develop sustainable alternative fuels which can be generated from biomass and emerging fuels that could reduce the load on the non-renewable fuels and decrease the level of pollution.

16. Biodefense development of a multi-dimensional antidote platform

Nextgen biodefense is a need of time. It includes measures to restore biosecurity against pathogenic organisms, bacteria, viruses, fungi, and biological toxins potential warfare to exploit and eliminate biological threats in the context of bio-war or bioterrorism. Rapid detection of biological threats or infectious diseases by forensic and intelligence operations need of more algorithms in bioinformatics for biodefense databases and also a need of potential antidote database. Innovative computational applications are required in order to explore next-generation genome sequence, marker database, antibiotic resistance database with mitigation and medical intelligence for the forensic operation to handle bio-threats.

Manipal BioTech Hackathon '21

Manipal - Government of Karnataka BioIncubator & Manipal School of Life Sciences, Manipal Academy of Higher Education (MAHE), Karnataka
16 - 23 July 2021

17. Precision Medicine

According to Food and Drug Administration (FDA), Precision medicine, sometimes known as 'personalized medicine' is an innovative approach to tailoring disease prevention and treatment that considers differences in people's genes, environments, and lifestyles. The sector includes generating genetic profile data as well as clinical data which are analysed to design the personalised patient health care. The challenges of generating, managing, and processing the data as well as accurately designing the treatment would warrant many innovative methods.

18. Antibody Engineering- Building better antibodies

Antibodies have been used in various therapies. The Recent technological innovations provide insights on various markers, receptors, ligands, and other biomolecules, which are part of cell signalling that trigger immune reactions. The structural modification of antibodies based on the target can influences/ trigger an action on a particular target to create an immune response to get rid of the targeted cell or foreign materials. Amid the continuing pandemic and resistance to current antibiotics, innovations in antibody engineering may solve to develop better & novel therapeutics harnessing the immune system to fight disease.

19. Biosensors – development of electrochemical detection system for Wearable Devices & paper microfluidics detection kits

Biological receptors are integrated into a biosensor to selectively capture a target of interest detection capabilities with the gold standard method. Antibody-based medical diagnostic biosensors, biomarkers based on body fluids such as tears, blood, urine, and breast milk, biosensors that mimic olfaction for recognizing odors combined with microelectronics and 3D-printing are emerging in this sector. These biosensor can be used in medical devices including diagnostics, for better sensing capacity.

20. Development and Application of organoids through 3D bioprinting

3D bioprinting innovation lead towards fabricating complex biological constructs layer-by-layer assembly of biomaterials with applications of therapy, drug screening, disease modelling, to address the unmet needs in the development of precision medicine and personalized treatments. The current challenges of developing organoids are reprogrammed cell proliferation, development of required shapes by internal vascularization, biomimicry for supporting biological and nonbiological material attachment and maintaining the activity of cells, promoting cellular proliferation and differentiation, guiding tissue regeneration and promoting functional maturity. Innovation in this emerging domain of 3D bioprinting demanding more innovative solutions and have huge market potential with numerous applications.

21. Biotech Nanobots - Hybrids Nanorobots

Innovative designing of nano-sized robots that are enough to enter the bloodstream and perform certain precise tasks such as targeting and killing cancer cells, delivering drugs to infectious sites. Nanorobot designs may include biomolecules/DNA-based structures containing cancer-fighting drugs that bind only with a specific biomarker found on cancer tumours/ target cells. Once it attaches, the robot releases its drug into the tumour/ target cells. Such precision delivery

Manipal BioTech Hackathon '21

Manipal - Government of Karnataka BioIncubator & Manipal School of Life Sciences, Manipal Academy of Higher Education (MAHE), Karnataka

16 - 23 July 2021

of the drug exactly to target, avoid overloaded toxicity in patients, and reduce the side effects and improving the patient experience.

22. Artificial Intelligence-Solve drug design, discovery, vaccine innovation and Precision medicine

AI enables innovators to automate a wide range of processes, helping them scale up their operations. For instance, Innovators can leverage AI to speed up the screening of drug discovery process, screening of billion molecules that don't exist in nature, biomarkers screening to discover novel, innovative products. Currently, Big data is complex, so noisy & sparse and heterogeneous available in biological and clinical data streams. Unique AI algorithms allow to solve these problems by exploring the raw data from medical scans, drug database, and crop disease patterns/symptoms, biomolecules, microbiomes, screen phenotypes, and develop rapid solutions.

23. Revolutionizing the Biotech Industry through Big Data

The unprecedented amount of data available in virtual libraries with Millions of compounds, Biomolecules, Bio-markers, genetic, ethnic, medical, microbial, bioinformatics and other biological data capable of integrating and transform into innovative solutions. These unexplored Big data & analytics solutions allow BioTech innovator to tap into this wealth of data to drive innovation for a wide array of problems through real investigation of this massive data. Innovations based on artificial Intelligence, augmented machine learning and deep learning for Predictive Analytics, Prescriptive Analytics and other technologies that assist in resolving the challenges surrounding big data.

24. Biochemical smell Sensors. Rapid detection

Development of Olfactory biological sensor System/ technologies based on the biological nose as a model that mimics human/Animal olfaction that capable of detecting different types of odour components highly accurate high sensitivity with support of AI technologies to detect health, diseases, mixtures of gases, environmental risks, including COVID-19, etc. with a wide range of other possible applications in medicine, lifestyle, fragrance research, biosafety, industry, environment, agriculture, food industries etc.,.

25. Drug Delivery Systems

Develop formulations or devices that enable the delivery of the therapeutic substance to selectively reach the site of action without causing issues in the non-targeted sites

26. Drugs and biomaterials from Oceans

To explore the biodiversity of seas and oceans and to explore potential molecules which can be further developed as potential drugs as well as useful biomaterials for many applications. Novel applications for characterized biomaterials also would increase the usability of the molecules from oceans.

Manipal BioTech Hackathon '21

Manipal - Government of Karnataka BioIncubator & Manipal School of Life Sciences, Manipal Academy of Higher Education (MAHE), Karnataka
16 - 23 July 2021

27. Optical sensors

It converts light into an electrical signal. It is a small device integrated to several instruments. It has the potential to apply in various field of biomedical/biotechnology/agriculture.

28. Handheld device

An innovative portable device that can be carried and held in one's palm as a replacement for heavy instruments, especially those needed in field studies, rather than taking samples to labs. There are several such devices, including smartphone-based devices, targeting various applications.

29. Smart agriculture

It integrates the information and communication technologies along with the machine/devices. It includes sensors, software, data science, robotics, connectivity. Innovative with Sophistication of agriculture would be an asset that ensures a high yield with less human labour.

30. Hyperspectral imaging

It collects and processes a wide range of electromagnetic spectrum in the form of an image. It is extensively used in agriculture for the detection and identification of crops.

31. Laser ablation

It is a technique where the surface materials of solid are removed by irradiating laser. Both CW and pulsed lasers are used in this case and choose according to the applications. Laser ablation-based surgery is getting popular.

32. Green synthesis

It is an emerging field in bionanotechnology, which is an alternative to physical and chemical methods. With the help of eco-friendly and safe reagents, various nanoparticles are synthesized and are used in the detection/identification of pathogens.

33. Biomanufacturing

Biomanufacturing is using biological systems to manufacture special molecules of interest which may include drugs, biomaterials, food, beverage as well as speciality chemicals. Biomanufacturing may include cell culture methods, fermentation, and recombinant technology. Optimizing the manufacturing conditions, automation and scalability are current challenges in the sector. Innovation and discovery of new molecule of interest may be valuable for the ever-changing demand for drugs and biomaterials.

CONGRATULATIONS

Mr. Shuaib Pasha, Ms. Shachi Adiga J. and Ms. Syeda Nayaab who bagged 5th place in a week-long virtual conducted by BioTech Hackathon Manipal-GoKBioincubator, Startup Karnataka, K-Tech, Govt. of Karnataka from 16th to 23rd July, 2021 for students with interest and entrepreneurial zeal to solve real world problems in the Biotech domain.



The team focused on the problem of eco-friendly medical products and worked on the development of this concept and a prototype with critical features, along with a business plan and a business model for their product.

They were also chosen for further pre-incubation programme and have been invited to avail a 6-month structured Pre-Incubation programme worth INR 24000 by Manipal-GoKBioincubator, to take their idea to the next level.

They were mentored by Faculty Dr. Prajna Rao K.



Karnataka Innovation and Technology Society
Department of Electronics, IT & Bt

Startup Karnataka

Launches the 2nd edition of

E-STEP BOOTCAMP

Your First Step Towards Entrepreneurship

Date : 19th May 2021 - 11th June 2021

Timings : 9:00AM to 5:00PM

Accelerate

E-Step

Your First Step Towards
Entrepreneurship

Execute

Scan to register



Incubate

Virtual Mode

Incorporate

Click to register: <https://bit.ly/2PNFZ3A>

Who Can Attend: Students (Under graduates and above), Startups and Entrepreneurs

List of all New Age Innovation Network (NAIN) Institution

- Sri Jayachamarajendra College of Engineering (SJCE)
- Vidya Vikas Inst. of Engg. & Tech. (VVIET)
- SBRR Mahajana First Grade College
- Ghousia College of Engg. (GCE)
- SJC Institute of Technology (SJCIT)
- Mainad College of Engineering (MCE)
- Vivekananda College of Engg. & Tech. (VCET)
- SDM College of Engineering & Technology
- PA College of Engg. (PACE)
- Sahyadri College of Engg. (SCE)
- St. Joseph Engg. College
- Mangalore Institute of Tech. & Engg (MITE)
- N.M.A.M. Institute of Technology
- Jawaharlal Nehru National College of Engg.
- Bapuji Institute of Engg. & Tech. (BIET)
- Ballari Institute of Tech. & Management (BITM)
- Guru Nanak Dev Engg. College
- VD Rural Inst. of Tech.
- RBYM Engg. College
- KLE Dr. MS Sheshgiri College of Engg. & Tech.
- PDA College of Engg.

Organised by



www.startup.karnataka.gov.in

Connect us with:



E-Step BootCamp – Schedule

Your First Step Towards Entrepreneurship

#	Date	Day	Districts	Name of the Institution	BISEP Host Institute & DBT Skill Vigyan Institute	KITS Staff Member
1	19-05-2021	Wednesday	Mysuru	SJCE	JSS	Inchara
2	20-05-2021	Thursday	Mysuru	Vidya Vikas Inst. Of Engg. & Tech.	University of Mysore	
3	21-05-2021	Friday	Mysuru	SBRR – Mahajana's		
4	22-05-2021	Saturday	Ramanagara	Ghousia College Of Engg.	DSCE, Mount Carmel College, MLACW MSRIT ICAR GPS institute	
	23-05-2021	Sunday	BREAK			
5	24-05-2021	Monday	Chikkaballapura	SJCIT	KSTA PESU, Padmashree college, The Oxford college of Sciences SIT(Tumkur)	Ms. Hemapiya
6	25-05-2021	Tuesday	Kalaburagi	PDA	Gulbarga University, Akkamahadevi university, Vijayapura	
7	26-05-2021	Wednesday	Hassan	MCE		
8	27-05-2021	Thursday	Dakshina Kannada	VCET, Puttur		
9	28-05-2021	Friday	Dakshina Kannada	SDM, Ujjire		Ms. Ramya
10	29-05-2021	Saturday	Mangaluru	PA College Of Engg.	Yenepoya St. Aloysius College Mangalore University	
	30-05-2021	Sunday	BREAK			
11	31-05-2021	Monday	Dakshina Kannada	Sahyadri College of Engg.		Ms. Ramya
12	01-06-2021	Tuesday	Dakshina Kannada	St. Joseph Engg. College		
13	02-06-2021	Wednesday	Dakshina Kannada	MITE		Mr. Deepak
14	03-06-2021	Thursday	Udupi	NMAMIT	Manipal School of Life Sciences	
15	04-06-2021	Friday	Shivamogga	JNNCE		
16	05-06-2021	Saturday	Davangere	BIET		
	06-06-2021	Sunday	BREAK			
17	07-06-2021	Monday	Bidar	GNDE College		Ms. Ruman
18	08-06-2021	Tuesday	Ballari	Rao Bahadur Y Mahabaleswarappa Engg. College		

19	09-06-2021	Wednesday	Ballari	BITM		
20	10-06-2021	Thursday	Uttara Kannada	VDRIT, Haliyal	KLETU (Hubballi) IABT (Dharwad) SDM college of Medical Sciences and Hospital (Dharwad)	
21	11-06-2021	Friday	Belagavi	KLE Dr. MS SCET	Basaveshwar Engineering College(Bagalkote) University of Horticultural Sciences (Bagalkote)	Ms. Inchara

E-STEP BOOTCAMP - AGENDA

<u>Time</u>	<u>Activity</u>
09:00 AM – 09:10 AM	Welcome Address Dr. E.V. Ramana Reddy, IAS Additional Chief Secretary Department of Electronics, IT, Bt and S&T Government of Karnataka
09:10 AM – 10:10 AM	Video on Startup Ecosystem in Karnataka & State Startup Policy Startup India Session, Policy, Initiatives & Schemes Mr. Gudipudi Krishna Sharma Invest India Government of India
10:10 AM – 10:40 AM	Ideation <i>Team Works on various ideas and place it on the canvas based on Problems, Solutions, Customer & Competitors</i> Mr. Vishnu Nagaraj Founder CEO Carve Startup Labs
10:40 AM – 11:30 AM	Working on Canvas – Brainstorming
11:30 AM – 12:00 PM	Product Design and Marketing <i>Team works on the look alike design of the product</i>
12:00 PM – 12:30 PM	Working on Canvas – Design Thinking
12:30 PM – 01:00 PM	Product Development <i>Find all the requirements of Product Development by Understanding the functions and features of user need</i>

01:00 PM – 02:00 PM	Working on Canvas – Research & Development
02:00 PM – 02:30 PM	Business Model <i>Make a Business model for your idea in Business model canvas</i>
02:30 PM – 03:00 PM	How To Create Pitch Deck
03:30 PM – 04:00 PM	Working on Canvas - Innovation
04:00 PM – 04:30 PM	Mock Pitch Session
04:30 PM – 05:00 PM	Mentor Talk Local Entrepreneur – Entrepreneurial Journey
05:00 PM – 05:10 PM	Vote of Thanks Smt. Meena Nagaraj, IAS Director, Department of Electronics, IT & Bt and Managing Director, KITS Government of Karnataka



NAIN Logo



Startup Karnataka Logo

EDP / Bootcamp Name:	E-Step Bootcamp Karnataka - Mangaluru
Date:	29 th May 2021
Venue:	Zoom platform
Duration of Event:	1 day
No. of Participants:	70

Participant List

1	ADITHYA A
2	AKSHAY KUMAR V
3	ANUPAMA
4	BABYSHWETHA SURESH MOGER
5	CHARAN RAJ
6	CHAYASHREE R BANGERA
7	GAANA RUKMINI S M
8	GAUTHAM
9	HITHESH K
10	KAVYA
11	MANOHAR PRASAD
12	NIDHI SHETTY
13	NISHMITHA K
14	NRUTYA KOPPALARAMANE
15	POOVAMMA C D
16	PRASAD K.
17	PREETHA A S
18	SABA FARIYAN
19	SHACHI ADIGA J
20	SHUAIB PASHA
21	SUDEV P
22	SUJITH A M
23	SUSHMITHA K Y
24	SYEDA NAYAAB
25	VASUDHA HONNAPPA
26	VEEKSHITHA
27	VIJENDRA PRASAD
28	YAKSHITH A
29	ADESH
30	AJITH GOWDA N M
31	AMBIKA SANGAPPANAVAR
32	ANJANA G S
33	ANUSHA V K
34	ANUSREE M R



NAIN Logo

Startup Karnataka Logo

35	ANVITHA
36	APOORVA D
37	ARUN H S
38	ASHWATH KESARI
39	ASHWITHA P
40	BHUVANA H E
41	DEEPIKA BHAT K
42	DHANUSHKUMAR T
43	JOEL RIMSON PINTO
44	KIRAN K
45	KRUTHI S
46	NIMISHA SUKUMARAN
47	PRAJNA S
48	RAKSHA B
49	S AJITH KUMAR
50	SHRADDA
51	SHREERANJANI U
52	SHREYA
53	SHRINIDHI BHAT
54	SINCHANA R
55	SPANDANA N S
56	VANISHREE M
57	VIDYASHREE H T
58	ABHISHEKA G.
59	SERIN SABU
60	MAHIDA VASEEM
61	SHILPASHREE N
62	NITHINRAJ
63	NISHAD SAIDA BANU
64	AMRITHA V. SAMANI
65	SHARATH V R
66	ABHINA K
67	SUSHMITHA
68	DEVIKA C H
69	ASHWINI
70	HANI KONGOT

NAIN Logo



Startup Karnataka Logo

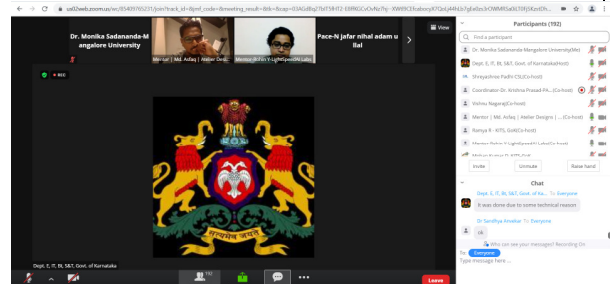
Activities Performed:

1. Introduction about ideation by Mr. Vishnu Nagaraj
2. Participants were given time to work in groups to develop ideas (problem, competitor, people).
3. Briefing on Illustrating the idea such that it is Customer-based or centered (reasons to buy and why are they opting for a product/service)
4. Survey questionnaire from Customer to understand why they want and would buy a product or opt for a service
5. Product development canvas with versions was described including details such as user activities, redesign, functions, features, components, customer revalidation and reject components
6. Students developed their products
7. Modeling of business was done using a canvas with key concept such as key partners, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structure and revenue streams (customer money).
8. Participants learnt how to formulate a Pitch Desk step-by-step
9. Participants interacted with 2 energetic, start-up entrepreneurs.

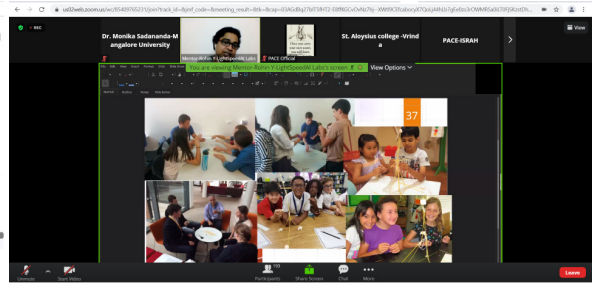
Programme Outcome:

Participants understood concepts in start up ecosystem
Participants learnt the basics of ideation, customer survey, product development and business models
Participants developed nuts and bolts skills in ideation, customer-centered advertising and product development
Participants collaborated and did team work
Participants were motivated by presentations of start-up entrepreneurship

Photograph 1



Photograph 2



Dr. Monika Sadananda
Coordinator
Mangalore University