MAHENDRA ENGINEERING COLLEGE (AUTONOMOUS) [ARI-C-37054][C-37054]

Section 1: Policy And Institutionalization Of I&E Activities In HEIs (Academic Calendar Year 2020-21 & 2021-22)

1.1) Adoption Level of Innovation and Entrepreneurship (I&E) Policy in HEIs: Registration; Policy Formulation; Policy Implementation

Completion of Action Items (status as on 7th November 2022)	Status
Registered in the NISP portal for I&E Policy Adoption	Yes
Institute has Formulated an Innovation and Entrepreneurship (I&E) Policy	No
Institute has Action Plans for Implementation of the I&E Policy	No

Contact:

Faculty Name:	Dr.P.Umasankar
Designation:	Professor
Email ID:	umasankarp@mahendra.info
Mobile No.	9087744799

1.2) Performance Level of Institution's Innovation Councils (IICs) Established in HEIs: Scores and Stars Obtained

Annual Performances of IIC Institute	Stars Secured
IIC 1.0 (2018-19)	1,2,3,4
IIC 2.0 (2019-20)	4
IIC 3.0 (2020-21)	3.5
IIC 4.0 (2021-22)	4

Contact:

IIC President of the Institute:	Dr.D.Subramaniam
Designation:	Professor/Mechanical

Email ID:	subramaniamd@mahendra.info
Mobile No.	9790276169

1.3) Activeness of Trained Innovation Ambassadors in Driving Campus I&E Ecosystems in HEIs: Trained IA/HEI and Nos of Prescribed Activities undertaken by IA

Sr. No.	Name of the Faculty IA	Level of Training	No of I&E Expert Talks/Sessions Conducted
1	Dr. C.DHAVAMANI	Advance	17
2	Dr. K. Vidhya	Advance	14
3	Dr. S. ASOKKUMAR	Advance	0
4	Dr. K. Vidhya	Advance	0
5	Dr.T.Jesudas	Basic	0
6	Dr D Subramaniam	Advance	10
7	Dr.R.Sasikumar	Advance	15
8	Dr.S.Gobinath	Basic	0
9	Dr.S.Sumathi	Advance	1
10	Dr.M.Muthuvinayagam	Advance	1
11	Dr.S.Ponlatha	Advance	2
12	Dr.T.Jesudas	Basic	0

1.4) Participation in KAPILA/SIH Program

HEI Registered in the KAPILA Portal	C-37054	Yes
HEI Participated in the Smart India Hackathon (2022)	C-37054	Yes

Section 2: Teaching and Learning: Academic Programs related to Innovation and Entrepreneurship (I&E) Offered by the HEI

2.1) Academic Courses in Innovation, Entrepreneurship and IPR

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
1	Survey Camp	19CE26401	2020-21	Core Course	Bachelor	CIVIL ENGINEERING	3
2	Formwork Engineering	17CE15601	2020-21	Elective Course	Bachelor	CIVIL ENGINEERING	3
3	Concrete Materials Testing and Evaluation	19CE14406	2020-21	Core Course	Bachelor	CIVIL ENGINEERING	3
4	CADD Laboratory	19CE23302	2020-21	Core Course	Bachelor	CIVIL ENGINEERING	3
5	Structural Design Lab	Structural Design Lab	2020-21	Core Course	Bachelor	CIVIL ENGINEERING	3
6	Inplant Training and Internship	17CE56702	2020-21	Core Course	Bachelor	CIVIL ENGINEERING	3
7	Survey Camp	19CE26401	2021-22	Core Course	Bachelor	CIVIL ENGINEERING	3
8	Formwork Engineering	19CE15602	2021-22	Elective Course	Bachelor	CIVIL ENGINEERING	3
9	Concrete Materials Testing and Evaluation	19CE14406	2021-22	Core Course	Bachelor	CIVIL ENGINEERING	3
10	CADD Laboratory	19CE23302	2021-22	Core Course	Bachelor	CIVIL ENGINEERING	3
11	Structural Design Lab	19CE24602	2021-22	Core Course	Bachelor	CIVIL ENGINEERING	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
12	Advanced Concrete Technology	19CE14603	2021-22	Core Course	Bachelor	CIVIL ENGINEERING	3
13	Project Phase - II	Project Phase - II	2021-22	Core Course	Bachelor	CIVIL ENGINEERING	3
14	Structural Design Lab	19STE22101	2020-21	Core Course	Master	CIVIL ENGINEERING	3
15	Health Monitoring and Retrofitting of Structures	19STE13105	2020-21	Elective Course	Master	CIVIL ENGINEERING	3
16	Project Management Laboratory	19CEM22201	2020-21	Core Course	Master	CIVIL ENGINEERING	3
17	Design of Formwork Engineering	19STE13301	2020-21	Elective Course	Master	CIVIL ENGINEERING	3
18	Inplant Training	19STE34201	2020-21	Core Course	Master	CIVIL ENGINEERING	3
19	Inplant Training	19CEM34201	2020-21	Core Course	Master	CIVIL ENGINEERING	3
20	Advanced Concrete Technology	19STE13101	2021-22	Elective Course	Master	CIVIL ENGINEERING	3
21	Project Phase - II	19STE36401	2021-22	Core Course	Master	CIVIL ENGINEERING	3
22	Project Phase - II	19CEM36401	2021-22	Core Course	Master	CIVIL ENGINEERING	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
23	Universal Human Values	19SH11601	2021-22	Core Course	Bachelor	COMPUTER SCIENCE ENGINEERING	3
24	Human Resource Management	17ME10012	2021-22	Elective Course	Bachelor	COMPUTER SCIENCE ENGINEERING	3
25	Entrepreneurship Development	19ME10005	2021-22	Elective Course	Bachelor	COMPUTER SCIENCE ENGINEERING	3
26	Intellectual Property Rights	19EE15808	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
27	Project Management	19EE15807	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
28	Human Resource and Management	19EE15809	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
29	Industry 4	19EE15805	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
30	Soft Computing techniques	19EE15802	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
31	Web of Things	19EE15801	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
32	Electronic Product Design	19EE15710	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
33	Electric vehicles	19EE15605	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
34	Modeling using softwares	19EE15602	2020-21	Elective Course	Bachelor	ELECTRICAL AND ELECTRONICS ENGINEERING	3
35	Food Microbiology	19FT14301	2020-21	Core Course	Bachelor	FOOD TECHNOLOGY	3
36	Food Analysis	19FT14404	2020-21	Core Course	Bachelor	FOOD TECHNOLOGY	3
37	Food Microbiology	19FT14301	2021-22	Core Course	Bachelor	FOOD TECHNOLOGY	3
38	Food Analysis	19FT14404	2021-22	Core Course	Bachelor	FOOD TECHNOLOGY	3
39	Intellectual Property Rights	19IT15019	2020-21	Elective Course	Bachelor	INFORMATION TECHNOLOGY	3
40	Cyber Forensics	19IT15018	2020-21	Elective Course	Bachelor	INFORMATION TECHNOLOGY	3
41	Soft Computing	19IT15012	2020-21	Elective Course	Bachelor	INFORMATION TECHNOLOGY	3
42	Natural Language Processing	INFORMATION TECHNOLOGY	2020-21	Elective Course	Bachelor	INFORMATION TECHNOLOGY	3
43	Artificial Intelligence and Deep Learning	19IT14603	2020-21	Core Course	Bachelor	INFORMATION TECHNOLOGY	3
44	Industrial Electronics and Applications	19MT15015	2020-21	Elective Course	Bachelor	MECHATRONICS	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
45	Embedded Systems	19MT15011	2020-21	Elective Course	Bachelor	MECHATRONICS	3
46	Computer Aided Design	19MT15020	2020-21	Elective Course	Bachelor	MECHATRONICS	3
47	Entrepreneurship Development	19MT15024	2020-21	Elective Course	Bachelor	MECHATRONICS	3
48	Operation Research	19MT15004	2020-21	Elective Course	Bachelor	MECHATRONICS	3
49	Product Design and Development	19MT15003	2020-21	Elective Course	Bachelor	MECHATRONICS	3
50	Artificial Intelligence	19MT15007	2020-21	Elective Course	Bachelor	MECHATRONICS	3
51	Nanotechnology	19MT15013	2020-21	Elective Course	Bachelor	MECHATRONICS	3
52	Microbiology	19PT14301	2020-21	Core Course	Bachelor	PHARMACEUTICAL TECHNOLOGY	3
53	Pharmaceutical Analysis	19PT14404	2020-21	Core Course	Bachelor	PHARMACEUTICAL TECHNOLOGY	3
54	Microbiology	19PT14301	2021-22	Core Course	Bachelor	PHARMACEUTICAL TECHNOLOGY	3
55	Pharmaceutical Analysis	19PT14404	2021-22	Core Course	Bachelor	PHARMACEUTICAL TECHNOLOGY	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
56	Crop husbandry laboratory	19AG24301	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
57	Design of Agricultural Machinery	19AG14501	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
58	Farm Equipment	19AG14502	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
59	CAD for Agricultural Machinery	19AG24502	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
60	Industrial Training	19AG56501	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
61	Farm Power and Machinery Management	19AG14601	2021-22	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
62	Irrigation Equipment Design	19AG14602	2021-22	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
63	Remote sensing and GIS in agriculture	19AG14701	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
64	GIS laboratory	19AG24701	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
65	Harvesting Equipments and Machineries	19AG14702	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
66	Industrial Training	19AG56701	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
67	Technical Seminar	19AG56702	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
68	Project Phase - I	19AG36701	2020-21	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
69	Project Phase II	19AG36801	2021-22	Core Course	Bachelor	AGRICULTURAL ENGINEERING	3
70	Python Programming	19EC14304	2020-21	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
71	Python Programming	19EC14304	2021-22	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
72	Hardware Description Language	17EC10005	2020-21	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
73	Hardware Description Language	17EC10005	2021-22	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
74	FPGA and ASIC Design	17EC15022	2020-21	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
75	FPGA and ASIC Design	17EC15022	2021-22	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
76	Cognitive Radio Communication	17EC15023	2020-21	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
77	Cognitive Radio Communication	17EC15023	2021-22	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
78	Managerial Skills and Quality Management	19EC11401	2020-21	Core Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
79	Computational Tool for Image and Video Processing	17EC34601	2020-21	Core Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
80	Computational Tool for Image and Video Processing	17EC34601	2021-22	Core Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
81	Robotics and Automation	17EC15026	2020-21	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
82	Robotics and Automation	17EC15026	2021-22	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
83	Cryptography and Network Security	17EC15027	2020-21	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
84	Cryptography and Network Security	17EC15027	2021-22	Elective Course	Bachelor	ELECTRONICS AND COMMUNICATION ENGINEERING	3
85	Research Methodology and IPR	19MLC60001	2020-21	Core Course	Master	COMMUNICATION SYSTEM	3

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
86	Research Methodology and IPR	19MLC60001	2021-22	Core Course	Master	COMMUNICATION SYSTEM	3
87	Advanced Bio-Medical Engineering	19COM13020	2020-21	Elective Course	Master	COMMUNICATION SYSTEM	3
88	Advanced Bio-Medical Engineering	19COM13020	2021-22	Elective Course	Master	COMMUNICATION SYSTEM	3
89	Internet of Things	19COM13021	2020-21	Elective Course	Master	COMMUNICATION SYSTEM	3
90	Internet of Things	19COM13021	2021-22	Elective Course	Master	COMMUNICATION SYSTEM	3
91	Python Programming Lab	19MCA22108R	2020-21	Core Course	Master	MASTER OF COMPUTER APPLICATIONS	3
92	Mini Project Work	19MCA34308R	2021-22	Core Course	Master	MASTER OF COMPUTER APPLICATIONS	3
93	Project Work	19MCA34403R	2021-22	Core Course	Master	MASTER OF COMPUTER APPLICATIONS	3
94	Software Project Management	19MCA13402R	2021-22	Elective Course	Master	MASTER OF COMPUTER APPLICATIONS	3
95	Enterprise Resource Planning	19MCA13408R	2021-22	Elective Course	Master	MASTER OF COMPUTER APPLICATIONS	3
96	Modeling and Simulation Laboratory	19AE24403	2021-22	Core Course	Bachelor	AERONAUTICAL ENGINEERING	2

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score
97	Managerial Skills and Quality Management	19AE11501	2021-22	Core Course	Bachelor	AERONAUTICAL ENGINEERING	3

2.2) Non-Academic Courses in Innovation, Entrepreneurship and IPR

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Pro Sta Da
1	FDP	2021-22	Faculty Development Program (FDP)	Industry/Non-Govt.	ELECTRICAL AND ELECTRONICS ENGINEERING	16- 202 00:
2	How to plan for Start-up and Legal and Ethical Steps	2021-22	Entrepreneurship Development Program (EDP)	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	09- 202 00:
3	Entrepreneurship	2021-22	Entrepreneurship Development Program (EDP)	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	13- 202 00:
4	Problem solving and ideation workshop	2021-22	Short-term Certificate Program	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	18- 202 00:
5	Practical Energy efficiency solutions	2021-22	Short-term Certificate Program	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	08- 202 00:

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Pro Sta Da
6	Formwork Engineering and Concrete by L and T (COOFEC)	2020-21	Short-term Certificate Program	Industry/Non-Govt.	CIVIL ENGINEERING	17- 20: 00:
7	Special Concretes (Light weight Cellular Concrete and Cement Composite Mixture) CBRI Rookee	2020-21	Short-term Certificate Program	Central Govt. Agency	CBRI - CSIR	02- 20: 00:
8	Formwork Engineering Concrete by L and T (COOFEC)	2021-22	Short-term Certificate Program	Industry/Non-Govt.	Civil Engineering and L and T	08- 20: 00:
9	Artificial Intelligence Enabled Sensors and Networks for 5G Wireless Communications	2021-22	Faculty Development Program (FDP)	Central Govt. Agency	Electronics and Communication Engineering	22- 20: 00:
10	CATIA V6	2021-22	Short-term Certificate Program	Self Sponsored/Supported	AERONAUTICAL ENGINEERING	17- 20: 00:
11	DXC Women Empowerment Program	2021-22	Short-term Certificate Program	Self Sponsored/Supported	AERONAUTICAL ENGINEERING	13- 20: 00:
12	Python Programming for Image Processing	2021-22	Short-term Certificate Program	Self Sponsored/Supported	AERONAUTICAL ENGINEERING	07- 20: 00:
13	Boot Camp on Solar Business Development	2021-22	Faculty Development Program (FDP)	Industry/Non-Govt.	EEE	05- 20: 00:

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Pro Sta Da
14	How to plan for Start-up and Legal and Ethical Steps	2021-22	Entrepreneurship Development Program (EDP)	Self Sponsored/Supported	EEE	11- 20: 00:
15	Entrepreneurship	2021-22	Entrepreneurship Development Program (EDP)	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	18- 20: 00:
16	Problem solving and ideation workshop	2021-22	Short-term Certificate Program	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	25- 20: 00:
17	Practical Energy efficiency solutions	2021-22	Short-term Certificate Program	Self Sponsored/Supported	ELECTRICAL AND ELECTRONICS ENGINEERING	01- 20: 00:
18	Intellectual Property Rights Startup Innovations	2021-22	Short-term Certificate Program	Self Sponsored/Supported	IQAC	22- 20: 00:
19	Drone workshop	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Aeronautical	26- 20: 00:
20	Advanced Drone Pilot Training	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Aeronautical	03- 20: 00:
21	Design and Analysis Tool Training	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Aeronautical	21- 20: 00:
22	Structural and Geo Confluence	2021-22	Faculty Development Program (FDP)	Self Sponsored/Supported	Civil Engineering	02- 20: 00:

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Pro Sta Da
23	Innovative Teaching Learning Practices in Engineering Education	2021-22	Short-term Certificate Program	Self Sponsored/Supported	IQAC	25-202 00:
24	ICT based Short Term Course on Technology Innovations and Employment Generation for Sustainable Rural Development	2021-22	Short-term Certificate Program	Central Govt. Agency	Electrical and Electronics Engineering	01-202 00:
25	RECENT ADVANCEMENTS IN ENVIRO - STRUCTURAL CONFLUENCE	2020-21	Faculty Development Program (FDP)	Self Sponsored/Supported	Civil ASCE	28-202 00:
26	Architecture Civil and Earthquake Engineering	2021-22	Faculty Development Program (FDP)	Self Sponsored/Supported	Civil Engineering ASCE	21-202 00:
27	Cloud Practitioner AWS	2021-22	Faculty Development Program (FDP)	Self Sponsored/Supported	CSE	12-202 00:
28	LATEST ADVANCEMENTS IN GEOENVIRO-STRUCTURAL CONFLUENCE	2021-22	Faculty Development Program (FDP)	Self Sponsored/Supported	Civil Engineering ASCE	03-202 00:
29	Stress Management	2021-22	Faculty Development Program (FDP)	Self Sponsored/Supported	CSE	04-202 00:
30	Formwork Components an System	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Civil Engineering ICI	02-202 00:

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Pr: Sta Da
31	Mix Design various Grades	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Civil Engineering ICI	24- 20: 00:
32	Microsoft Azure AI Fundamentals	2021-22	Faculty Development Program (FDP)	Self Sponsored/Supported	CSE	28- 20: 00:
33	Artificial Intelligence Enabled Sensors and Networks for 5G Wireless Communications	2021-22	Faculty Development Program (FDP)	Central Govt. Agency	ECE	06- 20: 00:
34	FDP	2020-21	Faculty Development Program (FDP)	Central Govt. Agency	EEE	22- 20: 00:
35	Blockchain Ethereum	2020-21	Faculty Development Program (FDP)	Central Govt. Agency	CSE	31- 20: 00:
36	Advanced Controller Design for Power Electronic Converters	2020-21	Faculty Development Program (FDP)	Self Sponsored/Supported	EEE	02- 20: 00:

Section 3: Pre-Incubation and Incubation Infrastructure & Facilities are Currently in Operation to Promote I&E Agenda (AY 2020-21 & 2021-22)

3.1) Existence of Pre-Incubation Facility (Tinkering Lab/Makers' Space/Design Centre/New Gen IEDC/IEDC/EDC/Innovation Cell/Startup Cell) (>= 600 Sq. Ft. Floor Area)

Sr. No.	Type of the Unit	Name of Unit	In-charge Name	Contact no	Email	Govt. Schemes
1	Start-Up Cell	Mahendra Technology Incubation Centre	Dr.N.Viswanathan	9976261014	hodece@mahendra.info	Mentoring Support, Grant Support,Pre-Incubation Facility Support (Idea to Prototype and Innov Business Plan Development),Incub Facility Support (Innovative Business Model to Startup an Market Linkage &am Growth Stage)

3.2) Existence of Incubation Facility (>= 1500 Sq. Ft. Floor Area)

Sr. No.	Name of Unit	In-charge Name	Contact no	Email	Govt. Schemes
1	Mahendra Incubation Centre	Dr.N.Viswanathan	9976261014	hodece@mahendra.info	MSME,Own Resource

3.3) Existence of IPR Cell / Patent Facilitation Unit / Technology Transfer Centre at the institute

Sr. No.	Type of the Unit	Name of Unit	In-charge Name	Contact no	Email	Govt. Schemes
1	IPR Cell	MEC IPR CELL	Dr Mahendra Gowda R V	6382083091	rvmgowda6@gmail.com	Mentoring Support,Seed Grant Support,Pre-Incubation Facility Support (Idea to Prototype and Innovative Business Plan Development),Incubation Facility Support (Innovative Business Model to Startup and Market Linkage & Growth Stage)

Section 4: Generation and Support of Prototypes / Innovations at HEI and Recognition received (AY 2020-21 & 2021-22)

4) Total no. of Innovations (Verified and Recommended) in Different TRLs (4-9) are Recorded in the YUKTI National Innovation Repository of the IIC Institute (Status as on 7th November 2022)

Sr. No.	Innovation Name	Developed as part of	FY of Development (FY. 2020-21,2021-22)	TRL Stage	Team Lead/Innovator Name	Current Engagement of Team Lead in Institute	Contact No	Emai
No Data Found								

Section 5: Start-ups/Ventures Established and Supported at HEI and & Recognitions Received (AY 2020-21 & 2021-22)

5) Total no of Ventures/Startups (Verified and Recommended) are Recorded in the YUKTI National Innovation Repository of the IIC Institute (Status as on 7th November 2022)

Sr. No.	Startup/Venture Name	Startup/Venture Registered as	CIN No/LLP/OPC/RC No	GST No	FY of Establishment	Startup/Venture Recognized by DPIIT/Startup India
No Data Found						

Section 6: Collaboration with Other Incubation Units, HEIs and Industry Associations to Strengthen Better Services and Support to Innovation & Startups at HEI (AY 2020-21 & 2021-22)

6) Collaboration with Other Incubation Units, HEIs and Industry Associations to Strengthen Better Services and Support to Innovation & Startups at HEI (AY 2020-21 & 2021-22)

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on	View
1	Ekeeda	Corporate/Industry Association	2	Active	12-04-2022	View (/Uploads
2	Fortinet	Corporate/Industry Association	3	Active	23-08-2020	View (/Uploads
3	ICT Academy	Corporate/Industry Association	5	Active	17-08-2020	View (/Uploads
4	IDS (Information Data Systems) Supported by AICTE	Non Govt. Agency	2	Active	22-03-2022	View (/Uploads

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on	View
5	Infosys Ltd	Corporate/Industry Association	2	Active	13-12-2021	View (/Uploads
6	K.C.P .Solar Industry	Corporate/Industry Association	2	Active	15-05-2020	View (/Uploads
7	National Cyber Safety and Security Standards	Non Govt. Agency	1	Active	29-12-2021	View (/Uploads
8	Oracle	Corporate/Industry Association	2	Active	20-02-2022	View (/Uploads
9	UiPath	Corporate/Industry Association	3	Active	20-02-2020	View (/Uploads
10	Virtusa Consulting Services Pvt Ltd	Corporate/Industry Association	3	Active	14-09-2021	View (/Uploads
11	Aerial Drobotics	Non Govt. Agency	3	Active	19-08-2021	View (/Uploads
12	Amazon Web Service	Corporate/Industry Association	1	Active	02-08-2021	View (/Uploads

Section 7: Intellectually Property (IP) Generated and Commercialization

7.1) IPR Filed and Published (Copyrights & Design only)

Sr. No.	Title/Name of IP (Copyright/Design Only)	Type of IP	IP Registration Number of Copyright/Design	Date of Filed/Published	Has this IP(Copyright & Designs Only) been Commercialized/Transferred to Industry/Startup/Society?
1	Water Purifying and Flavor Infusion Devices	Design	347808-001	21-08-2021	No

Sr. No.	Title/Name of IP (Copyright/Design Only)	Type of IP	IP Registration Number of Copyright/Design	Date of Filed/Published	Has this IP(Copyright & Designs Only) been Commercialized/Transferred to Industry/Startup/Society?
2	A Smart System to Control and Monitor Cultivation in a Hydroponic Environment and a Method Thereof	Design	9750027999	31-03-2021	Yes

7.2) Patents Filed by HEI

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
1	METHOD FOR ESTIMATION OF OCCURRENCE OF A CYBERSECURITY INCIDENT USING A PROBABILITY MODEL	202041006697	12-02-2020
2	IOT BASED LETTER BOX AND A METHOD THEREOF	202041010131	18-03-2020
3	DESIGN OF SMART WATER QUALITY MONITORING SYSTEM USING IOT	202041051450	17-11-2020
4	An Artificial Intelligence Based Method for Smart Energy Optimization for Massive Internet of Things	202141008044	01-02-2021
5	DESIGN OF AN EMBEDDED SYSTEM BASED PASSENGER SAFETY SYSTEM TO AVOID FATALITIES CAUSED WHEN PUTTING THE LIMBS OUT OF THE BUS WINDOW	DESIGN OF AN	01-02-2021
6	A Smart System to Control and Monitor Cultivation in a Hydroponic Environment and a Method Thereof	2021100169	01-03-2021
7	A SYSTEM AND METHOD FOR AUTOMATIC ATTENDANCE USING SMART CHAIR APPLICATION	202141023144	01-05-2021
8	A Solar-powered Smart Mailbox System using IoT	202141027491	01-06-2021
9	A method of Smart Vehicle Safety and Security System using Internet of Things	202141034638	01-08-2021
10	MODIFIED RANDOM FOREST ALGORITHM FOR THE DIAGNOSIS OF ALZHEIMER DISEASE	202141038348	01-08-2021
11	Machine Learning Based Approach to segment the Images Captured using various Modalities	202241001805	01-01-2022

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
12	SPUTUM/SALIVA CULTURE COVID-19 TEST USING MICRO-PROCESSING BASED BIO-STRIP WITH REAL-TIME IOT	202241001446	01-01-2022
13	An Alert System to Prevent Thefts	202241013892	01-03-2022
14	Artificial Neural Network Analysis of Investor Sentiment and Stock Market returns During the COVID-19 Pandemic	202241027262	01-05-2022
15	Design and Method of Brain MRI Analysis and Early Detection of Brain Diseases with Deep Learning	202241028297	01-05-2022
16	Hybrid Solar Power Generation With Lighting Systems In Street	202041011231	27-03-2020
17	Development of Smart Solar Powered Irrigation Using Artificial Intelligence	202141008433	01-03-2021

7.3) Patent Published / Granted Data

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
1	202041006697 A	METHOD FOR ESTIMATION OF OCCURRENCE OF A CYBERSECURITY INCIDENT USING A PROBABILITY MODEL	01-02-2020	Published	2020	Other(Individual)
2	202041010131 A	IOT BASED LETTER BOX AND A METHOD THEREOF	01-03-2020	Published	2020	Other(Individual)
3	202041051450 A	DESIGN OF SMART WATER QUALITY MONITORING SYSTEM USING IOT	01-11-2020	Published	2020	Other(Individual)

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
4	202141007937 A	An Artificial Intelligence Based Method for Smart Energy Optimization for Massive Internet of Things	01-03-2021	Published	2021	Other(Individual)
5	2021100169	A Smart System to Control and Monitor Cultivation in a Hydroponic Environment and a Method Thereof	01-03-2021	Published	2021	Other(Individual)
6	202141023144	A SYSTEM AND METHOD FOR AUTOMATIC ATTENDANCE USING SMART CHAIR APPLICATION	01-05-2021	Published	2021	Other(Individual)
7	202141027491	A Solar-powered Smart Mailbox System using IoT	01-06-2021	Published	2021	Other(Individual)
8	202141034638	A method of Smart Vehicle Safety and Security System using Internet of Things	01-08-2021	Published	2021	Other(Individual)
9	202241027262 A	Artificial Neural Network Analysis of Investor Sentiment and Stock Market returns During the COVID-19 Pandemic	01-05-2022	Published	2022	Other(Individual)
10	202241013892 A	An Alert System to Prevent Thefts	01-03-2022	Published	2022	Other(Individual)

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
11	202141060315	3-D based brain tumor detection using (DL) Deep learning and image processing Approach	23-12-2021	Published	2021	
12	202141056543	IoT and AI based Pedestrian Detection for Autonomous Vehicle	06-12-2021	Published	2021	
13	202141056544	IoT and fog computing technologies based educational systems	06-12-2021	Published	2021	
14	202141056296	AN IOT BASED SELF PHASED HEATING BLANKET	04-12-2021	Published	2021	
15	202141055574	TECHNIQUES TO CATEGORIZE THE STAGES OF LUNG CANCER IN DEPTH USING MACHINE LEARNING APPROACH	01-12-2021	Published	2021	
16	202141055253	THE IMPACT OF GOLD MONETIZAION SCHEME IN BANKING SECTOR & ITS EFFECT ON THE ECONOMY	29-11-2021	Published	2021	

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
17	202141055255	IOT AND WIRELESS SENSOR NETWORK BASED INTELLIGENT HOME BELL SYSTEM FOR EFFECTIVE HOUSE PROTECTIONS	29-11-2021	Published	2021	
18	202141055011	METHOD FOR ENERGY EFFICIENT ROUTING USING SUPPORT VECTOR MACHINE IN WIRELESS SENSOR NETWORKS	28-11-2021	Published	2021	
19	202141054736	GEO FENCING OF AGRICULTURAL LANDS BASED ON SOIL QUALITY USING DRONES AND SMART DEVICES	26-11-2021	Published	2021	
20	202111053910	4G5G TECHNOLOGY BASED SEVERAL-ANTENNAS FOR SMARTPHONE APP USING MULTI MODE	23-11-2021	Published	2021	
21	202141053477	GRIDNET, A CONVOLUTIONAL NEURAL NETWORK ARCHITECTURE, DESIGNED FOR THE SEMANTIC SEGMENTATION OF IMAGES	21-11-2021	Published	2021	

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
22	202121053475	IOT AND CLOUD BASED VOICE BASED SMART AUTOMATION SYSTEM USING GOOGLE-ASSISTANT	21-11-2021	Published	2021	
23	202111051973	MACHINE LEARNING AND IOT BASED SMART HUMAN ACTIVITY DISCOVERING SYSTEM FOR HEALTH CARE APPLICATIONS	12-11-2021	Published	2021	
24	202111051249	IOT AND CLOUD BASED INTELLIGENT TOLL GATE COLLECTION SYSTEM	09-11-2021	Published	2021	
25	202141050744	IOT AND CLOUD BASED ENERGY HARVESTING TECHNIQUE FOR RAIL BY USING ZIGBEE COMMUNICATION	05-11-2021	Published	2021	
26	202141050138	IOT AND BIG DATA BASED SMART HYDROPONIC FARMING WITH AQUACULTURE	01-11-2021	Published	2021	
27	202141049180	IOT BASED SPEED MONITORING USING PROXIMITY SENSOR.	27-10-2021	Published	2021	

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
28	202141048946	THE INTERNET OF THINGS (IOT) BASED NATURAL DISASTER RECOGNITIONAND SAFETY SYSTEM	26-10-2021	Published	2021	
29	202141048693	CLOUD AND IOT BASED SMART FOREST FIRE DETECTION AND WARNING SYSTEM.	25-10-2021	Published	2021	
30	202141048423	Cloud and IoT based temperature monitoring system.	23-10-2021	Published	2021	
31	202141048338	IMPLEMENTATION OF HUMAN HEALTH MONITORING SYSTEM USING IOT.	22-10-2021	Published	2021	
32	202141048085	CATEGORICAL RADIAL BASIS FUNCTION BASED NEURAL NETWORK ARCHITECTURES TO HANDLE CATEGORICAL AND MIXED DATA AS INPUTS	22-10-2021	Published	2021	
33	202141047283	Anti-Theft system based on the Internet of Things (IoT) to monitor unusual movements.	18-10-2021	Published	2021	

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
34	202141038348	MODIFIED RANDOM FOREST ALGORITHM FOR THE DIAGNOSIS OF ALZHEIMER DISEASE	24-08-2021	Published	2021	
35	202141027540	DEEP LEARNING METHOD BASED NATURAL DISASTER PREDICTION SYSTEM	19-06-2021	Published	2021	
36	202141020113	DESIGN AND METHOD OD EFFICIENT DETECTION OF STRUCTURAL SIMILARITY IN MAMMOGRAMS USING SVM CLASSIFIER	03-05-2021	Published	2021	
37	202141016498	AN EFFICIENT MACHINE LEARNING MODEL TO STUDY THE PATTERN OF GENES IN DIABETIC PATIENTS	08-04-2021	Published	2021	
38	202141009376	AN INTELLIGENT EARPHONE FOR REMOTE HEALTH MONITORING USING ARTIFICIAL INTELLIGENCE	05-03-2021	Published	2021	

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
39	202141008044	AN ARTIFICIAL INTELLIGENCE BASED METHOD FOR SMART ENERGY OPTIMIZATION FOR MASSIVE INTERNET OF THINGS	25-02-2021	Published	2021	
40	202141004698	AN EFFICIENT PORTABLE SOLAR POWERED SEED SOWING MACHINE	03-02-2021	Published	2021	
41	202041057415	EVALUATING PHYSICAL ACTIVITY OF COVID-19 PATIENTS DURING ISOLATION	31-12-2020	Published	2021	
42	202041057125	BIG DATA BASED DATA ANALYTICS METHOD FOR PRIVACY PRESERVATION	30-12-2020	Published	2021	
43	202041035556	Transmission Power And Frequency Based Network Selection Scheme For Minimizing The Harmful Radiation From GSM Mobiles	18-08-2020	Published	2019	
44	201941020280	Intelligent Control System For Vehicles	22-05-2019	Published	2019	
45	201941018956 A	Secure and reliable smart e-voting system using aadhar card	13-05-2019	Published	2019	

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
46	202041011231 A	Hybrid Solar Power Generation With Lighting Systems In Street	16-03-2020	Published	2020	
47	202041012787A	Harvesting Machine For Tapioca Vegetables	24-03-2020	Published	2020	
48	201941053565 A	Emergency Vehicle Warning System And Method For Traffic Decongestion At Intersections	23-12-2019	Published	2020	
49	201941053593A	Cloud Based Data Security Model And System Thereof	23-12-2019	Published	2020	
50	202041007785A	Novel Switching Agent for Zigbee Wireless Sensor Network Using LAR	24-02-2020	Published	2020	
51	202041043598 A	A System For Routing In Wireless Sensor Network	07-10-2020	Published	2020	
52	202041012631 A	SPT- MOBILE BANKING: SECURED PAYMENT TRANSFER USING MOBILE BANKING	23-03-2020	Published	2020	

7.4) IP Commercialized and Transferred to Industry/Startup

Sr. No.	Name of Technology Licenced/Transferred/Commercialized	Technology Type	Patent/Licence Holder name (Institute Co-ownership is Must)	Technology Transferred to	Nam Licer
1	A Smart System to Control and Monitor Cultivation in a Hydroponic Environment and a Method Thereof	IP/Patented Technology	Dr.P.Ramya	Other organisation/Agency	Dr.P.I

Declaration

To,
The ARIIA Committee
MHRD's Innovation Cell
New Delhi

Joint Declaration by the Head of the Institute and Nodal Officer

Dear Sir,

Herewith, myself **Dr. R.V.Mahendra Gowda** (Head of Institute) and **Dr. C.Dhavamani** (Nodal Officer) jointly declaring on behalf of our institute is that all the information submitted are true and correct to best of our knowledge.

Thank you

<table>
<tr>
<td align="center">The Head of Institute</td>
<td align="center">Nodal officer</td>
</tr>
<tr>
<td align="center">Dr. R.V.Mahendra Gowda,
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<td align="center">Dr. C.Dhavamani,
Nodal Officer,
MAHENDRA ENGINEERING COLLEGE (AUTONOMOUS),
Namakkal-637503 TAMIL NADU , Tamil Nadu</td>
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