A Report on 3.3.1 : Institution has created an ecosystem for innovations and creation and transfer of knowledge supported by dedicated centres for research, entrepreneurship, community orientation, incubation, etc.

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### Preface

Institution has created an ecosystem for innovations, creation and transfer of knowledge. College has Instrumentation laboratory and research laboratories for physical education, yogic science and computer engineering which helps students' and faculty members' research ideas to grow.

College has strengthened, practised and propagated the Traditional Sports and Games since its establishment to various states and countries. Floating Mallakhamb is an innovative game developed by the College. The research work undertaken in the physical education is very well used by coaches to enhance performance of the players.

In the instrumentation centre some models are developed of which the concept transfer to needy persons and association. The projects were presented at University level and other platforms to promote and propagate the concepts.

The software development activity undertaken by the computer department uses the outcome of research and development undertaken by the research centre of Computer Engineering. The innovative information systems and applications were developed and transferred to different organizations including University and Colleges.

Yoga and Naturopathy Department is using the knowledge developed during the research undertaken by the research scholars. It is extending the health care and wellness services to the society through Yoga therapy and Naturopathy treatments.

Request for additional intake for Ph.D. candidates in Computer Science and Engineering was applied to University.

## I] Innovative Games

#### ≻Floating Mallakhamb

Our faculty members who coach the Mallakhamb players have developed innovative game of Floating Mallakhamb. A wooden base with tyres attached at bottom is placed in the swimming pool. The wooden pole mallakhamb is attached at the center of the wooden base. Four swimmers hold the four corners of the wooden base for support. The mallakhamb players perform the mallakhamb in swimming pool. This is rightly said as floating mallakhamb.



Playing the mallakhamb helps to develop ones speed, reflexes, concentration, flexibility and co-ordination. It is the only game which is played against gravity. It is a good exercise to our body especially for backbone. Our whole body gets a massage while performing on Mallakhamb.

Practicing Mallakhamb in swimming pool on wooden base develops more bodycoordination and concentration as the base is floating in swimming pool.

## **II] Models developed in the Instrumentation** Laboratory

#### Participation in Avishkar 2019 Conducted by SGBAU Amravati



**District level** : 07 Jan 2020 (Bhartiya Mahavidyalaya Amravati)

D.C.P.E, H.V.P.M's, B.Sc. third year students, Roshan N.Bhagele and Deepak G. Kavale developed flood Alert and protection system project and participated at district level Avishkar competition 2019-20 organized by Bhartiya Mahavidyalaya Amravati under the aegis of S.G.B.A.U. Amravati. The main purpose of this system is to send SMS to the people about the danger if the water level of the river rises above particular level. Assistant Prof. Sachin A. Winchurkar guided the students, Course In- charge Prof. S.H. Datey, Head of the Department Prof. Deepa P. Vaidya, Dr. Srinivas P. Deshpande, Principal Dr. K. K. Debnath motivated the students. Student got valuable support from Honorable Padmshri Prabhakarrao Vaidya sir, the Secretary of the H.V.P.M.



#### > Participation in Avishkar 2018 Conducted by SGBAU Amravati

District level : 18 Dec 2018 (Shivaji Science College Amt)

University level: 26 Dec 2018 (S.G.B.A.U.Amt)



The B.Sc. third year students, Gaurav Kishorao Dewale and Abiram Mohanrao Lomte developed Alternative Miracle vehicle and Purvesh Sureshrao Ingle and Prathamesh Prakashrao Bhende created poster on Betterment Technology For Agricultural Field.

This project and poster were presented in **District level Avishkar Competition** on **18 Dec 2018** organized by Shivaji Science College. The **Alternative Miracle Vehicle** project was selected and presented in **University level Avishkar Competition on 26 Dec 2018** organized by SGBAU Amravati University. This project was selected in the **second round of the Avishkar Competition**. There are two batteries installed in this project. One battery drives vehicle and a second battery charge by the alternator while the vehicle is running, the system also has a solar panel and a wind turbine for charging the battery. The control unit automatically interchanges charging of batteries if the battery charging level decreases by 50%. The user can move the car forward, reverse, left, right as per the order of the voice. The battery charge level, charging voltage, working battery etc. displays on the LCD.

The students guided by Prof.Sachin A.Winchurkar, Dr. Sumita S. Pande, Prof. Yogesh M.Pharkade, Prof. Siddharth K. Ganvir, Prof. Sudhakar P. Sarkate, Mr. Rajendra Nerkar. Also the students got co-operation from Course In- charges Dr. S.H. Datey, Prof. Ajay P. Chendke, Head of the Department Prof. Deepa P. Vaidya, Vice Principal Dr. Srinivas P. Deshpande. Principal Dr. K. K. Debnath. The Students got valuable support from the Honorable General Secretary of H.V.P.M Padmshri Prabhakarrao Vaidya sir.





#### Participation in Avishkar 2017 Conducted by SGBAU Amravati

**District level:** 14 Dec 2017 (Shivaji Science College Amt)

University level: 28 Dec 2017 (S.G.B.A.U.Amt)

State level: 15 Jan 2018 (Krishi Vidyapith Rahori)



The B.Sc final year students Akshay S.Varhekar ,Kapil S.Deshmukh have created a smart voice control wheel chair and Divyani D.Kshar, Nisha M. Meshram have created a Women Security System project. Both Projects were presented in the district level Avishkar competition on 14 Dec 2017 at Shivaji Science College amravati. Both projects selected for university level Avishkar competition on 28 dec 2017 at S.G.B.A.U.

The Smart Voice Control Wheelchair project selected for state-level Avishkar competition at Krushi Vidyapeeth, Rahori on 15 Jan 2018. The smart voice control wheel chair has facility that it can move forward, backward as per command of voice.

Both projects also presented in Rotary Indrapuri Megha Trade fair jan 2018 and first prize won by Smart Voice Controlled Wheelchair Project. The chair can also be transformed into a bed. Similarly, Women Security system Project useful for women's to avoid the type of misconduct on women. This project has been installed in the size of the slippers, and if the woman kicks then button will pressed and the help message is sent to the important mobile number along with the location of the victim site. Prof Sachin A.Winchurkar, Prof. Dr. Sumita S. Pande, Prof. Yogesh M.Pharkade, Prof. Siddharth K. Ganvir, Mr. Rajendra Nerkar have been guided the students. Course in charge Prof. Seema H. Datey, Head of the Department Prof. Deepa P. Vaidya, Dr. Srinivas P. Deshpande, Principal Dr. K. K. Debnath sir cooperated to students. The students got valuable inspiration from Hon. General secretary Padmshri Prabhakarrao Vaidya sir.







By developing these electronic model projects, students got a view how to implement their academic knowledge for welfare of the community.

## **III]** Software Development activities

#### Coach Assistant System

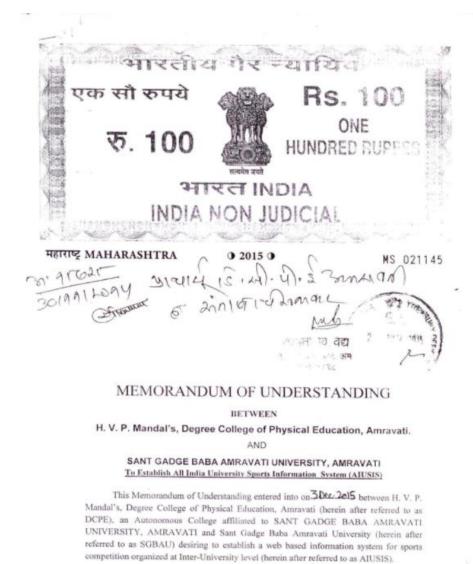
A data mining based system architecture is designed and the system is implemented which recommends and evaluates personalize training plan for individual player to enhance his/her skill and performance. This tool guarantees the improvement in the performance of the swimmers as the decisions of assigning training plan is based on scientific principles. This project is registered for patenting. The patent is published but yet to be awarded.

		FORM 30
	THE PA	TENTS ACT, 1970
	(	(39 of 1970)
		and
	THE PAT	ENTS RULES, 2003
	TO BE USED WHEN NO	O OTHER FORM IS PRESCRIBED
	[See sul	b-rule(2) of Rule 8]
1.	Name of the Applicant/	Ms. Deepa Prabhakarrao Vaidya
	Patentee/ Other	
2.	Complete address including	Assistant Professor, P.G. Department of
	postal index number/code	Computer Science & Technology, Degree
	and State along with e mail	College of Physical Education, Shree
	ID, telephone, mobile and	Hanuman Vyayam Prasarak Mandal,
	fax number	Amravati - 444 605
3.	Application No.	1772/MUM/2013
4.	Relevant section/ rules	Petition u/r 6(6)
5.	Purpose of request	Petition under rule 6(6)
6.	Details of request	Hon. Controller is requested to accept ou
		request for condonation of delay for
		submission of FER Response.
7.	To be signed by Agent	Quijous
8.	Name of the Natural person	Swapnil Gawande
	who has signed along with	Regd. Patent Agent IN/PA 1587
	designation and official seal, if any.	BLI Consultancy Pvt. Ltd.
Da	ted 20 <sup>th</sup> day of May, 2020	To,
		The Controller of Patents,
		The Patent Office,
		At Mumbai

Office of the Controller Gen Department of Industrial Po Ministry of Commerce & Ind Government of India	
APPLICATION NUMBER	1772/MUM/2013
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	19/05/2013
	1 . Ms. Deepa Prabhakarrao Vaidya 2. Dr. Shrinivas Prabhakarrao Deshpande 3 . Dr. Sanjay Uttamrao Makh
TITLE OF INVENTION	SWIMMING COACH ASSISTANT SYSTEM
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	sjgawande@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	ashutosh@bliconsultancy.co.in,infobli100@gmail.com
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	30/03/2015
PUBLICATION DATE (U/S 11A)	13/03/2015
REPLY TO FER DATE	18/05/2020
	Application Status
APPLICATION STATUS	Application in Hearing

#### > All Indian Sports Information System

A database is designed for the information about organizations, players' information, sports competition information, and freelancer expert details, etc. This information system is very unique and useful as it keeps information about sports competition and also provides information about different stakeholders, technical details, and players' performance data. The web pages developed and reports generated are self-explanatory. Due to its' availability on the web, the information has wide spread reach and available to anybody, anywhere, any time. A MoU regarding this project is being signed with Sant Gadge Baba Amravati University.



#### Nadi Samiksha

The user friendly system for physicians will be developed with auto intelligence for the standardized Nadi Pariksha technique to diagnose most of the diseases in its very early stages. The system can be used to compare the effects of medicine on the patients. It will be capable of exploring almost all physiological and pathological status of the patients.

A technique associative rule mining will be used for adding intelligence to the system through which it may become possible to diagnose at correct level over the predefined knowledge of pulse. This project is done in association with Vidarbha Ayurved Mahavidyalaya.

The students and staff members are implementing their technical knowledge to create software which will prove helpful to the society.

## **IV] Health care and wellness services**

The department of Yoga and Naturopathy provides various therapies for the patients

like:

#### > Yoga Therapy

Yoga therapy is a type of therapy that uses yoga postures, breathing exercises, meditation, and guided imagery to improve mental and physical health. The holistic focus of yoga therapy encourages the integration of mind, body, and spirit. Modern yoga therapy covers a broad range of therapeutic modalities, incorporating elements from both physical therapy and psychotherapy.

In their pain, to achieve the correct yoga posture various props are used like rope, brick, table, Bolster, pillow, blanket, chair, etc.



#### > Naturopathy

Naturopathy is a form of healthcare that combines modern treatment with traditional methods. It includes alternative, natural therapies to modern medicine. Various treatments are given to the patients as per their problem like hot footbath, spinal hot bath, steam bath, Enema, mud packs and plaster, etc.



#### > Physiotherapy

Physiotherapy is a health care profession which assists people to restore, maintain and maximize their strength, function, movement, and overall well-being. Physiotherapy includes rehabilitation, as well as prevention of injury, and promotion of health and fitness. The Physiotherapy was started for the injuries caused in sports to the players of the college. It is open for the local patients also. Various equipments are present like Shortwave diathermy wave, Interfereshiyal Therapy Unit (IFT), Ultra Sound m/c, Traction Unit (Electronic), Parafin Wax Bath, Finger Co-ordination Board, Slider, CPM Machine, etc.



#### Panchakarma

Panchakarma is a method of cleansing the body of all the unwanted waste after lubricating it. Panchakarma are 5 (five) in number; hence the term PANCHA (five) – KARMA (procedures). Panchakarma treatment is unique in the sense that it includes preventive, curative and promotive actions for various diseases.

According to Ayurveda, every human being is a unique phenomenon of cosmic consciousness, manifested through the five basic elements—Ether, Air, Fire, Water and Earth. Vata—a combination of ether and air, pitta—a combination of fire and water, and kapha—a combination of water and earth, are called the tridosha.



#### > Magnet Therapy

Magnetic field therapy uses different kinds of magnets on the body to help boost your overall health. It may also help treat certain conditions.

Your body naturally has magnetic and electric fields. All your molecules have a small amount of magnetic energy in them. The thought behind magnetic field therapy is that certain problems happen because your magnetic fields are out of balance. If you put a magnetic field near your body, it's believed things will go back to normal. Most magnetic field therapy is a treatment option for different types of pain, like in your feet and back.

All the above form of therapies are nurtured, practiced and imparted to students in order to get trained to help the patients for their betterment in natural ways.

## V] Applying for increasing seats for Ph.D. students in Computer Sci. and Engg.

College has Research Laboratory for Computer Science & Engineering. As the existing Guide was promoted to Professor Cadre so the intake for him increased. Also one more faculty applied and got recognition as Ph.D. supervisor so 5 more students could be accommodated. So College applied for increase in seats of Research Center. The Covering and Application is as below:

To,

The Assistant Registrar (Ph.D. Cell) Sant Gadge Baba Amravati University, Amravati.

Subject: Submission of Application form for increasing the seats of the Research Center.

Dear Sir,

This college is recognized research center for Ph.D. in the subject Computer Science and Engineering under the faculty of Science and Technology. At present, the sanctioned intake is 05 and one Research Supervisor in this subject working in the college. Two more faculty have completed their Ph.D. and have applied for recognition as Ph.D. supervisor. As the existing supervisor is in Professor cadre, as per the ordinance he is allowed to supervise maximum eight candidates. Also, sufficient infrastructure is available in the college for research purpose. To extend facility to the students and accommodate sufficient number of students, college is submitting its application for increase in the Intake. Application is in the prescribed format accompanied with a cheque of Rs. 5000/- in favor of 229920 dated 23/11/2020 as a processing fees.

Please, do the needful at your earliest. Thanking you.

Yours.

DCPE/60/2020 Date 24/11/2020

	SANT GADGE BABA AMRAVATI UNIVERSITY AMRAVATI
	APPLICATION FOR THE RECOGNITION
	AS A RESEARCH CENTER FOR Ph.D. PROGRAMME
Te	
-	The Deputy Registrar (Ph.D. Cell),
	Sant Gadge Baba Amravati University, Amravati.
L	Name of the College/Institute : Degree College of Physical Education, Amravati
2.	Year of Establishment of the Department (Specify the subject): P. G. Department of Computer Science and Technology - <u>1995</u>
	a) U.G. Department : <u>NA</u>
	b) P.G. Department : 1995
3.	Type of Affiliation : Permanent / Temporary (Duration) : Permanent
4.	Whether the College/Institute is under section 2 (f) & 12(B) of the UGC Act 1956? : Yes/No
5.	Whether the College / Institute is accredited by NAAC/NBA? ; Yes / No
	Date of accreditation / reaccreditation : 28/03/2019
6.	Subject in which the recognition is sought : Computer Science and Engineering Faculty: Science and Technology
7,	Name of the Recognized Supervisor/s : Dr. Shrinivas P. Deshpande
	Notification No. : 19/2012 dated 6/2/2012
8.	Number of Teachers / Scientists with Ph.D. Degree : 03 (Three)
9.	Infrastructural facilities exclusively available for Ph.D. Program:
	a Space of the Research Laboratory in Sq. Meter: 32.08 Sq. Meters
	Expected Intake Capacity: 15
	h Number of sophisticated instruments:
	<ul> <li>Library facilities : Total Space for Research Scholars: 71.925 Sq.Meters</li> </ul>
	Working Hours: 10 am to 6 pm on regular basis and can be extended on
	demand of the students.
	Details of Reference Books and Journals exclusively available for Ph.D. Programme :
	i) No. of Titles in the concerned subject : 339
	ii) No. of Journals in the concerned subject : 16
	<li>iii) No. of e-Journals in the concerned subject : 03</li>
	d. ICT facilities :
	<ol> <li>No. of PCs (Latest configuration) with Internet connectivity (exclusively for research students): <u>List Attached</u></li> </ol>
	ii) Speed of internet Connectivity (in Mbps) : 40 MBPS
1	Administrative and Research Promotional Facilities : <u>College has constituted Research Committee for the promotion and support research activity. The policy for research support, consultancy is drafted and adopted by the college. A 'Startup Incubation and IPR cell' is established to incubate innovative Ideas and startups. Incentives and seed money for supporting research culture are in place.</u>
te:	
ce:	( Seat
	Signature & Name of the Head/Principal)
	Segree College ( Playater, Education,