

**Proforma for submission of progress reports by  
colleges supported under Star College Scheme**

1. **Name of the College :** Ramakrishna Mission Vidyamandira, P.o.- Belur Math, Dist- Howrah, West Bengal, Pin – 711 202.
2. **Name of the Departments supported:** Physics, Chemistry & Industrial Chemistry, Microbiology and Computer Science.
3. **No. of regular faculty with Ph. D in each participating Department:** 15 Nos.
4. **List of courses run by different participating departments:** B.Sc. Physics Honours, B.Sc. Chemistry Honours, B.Sc. Industrial Chemistry Honours, B.Sc. Microbiology Honours, B.Sc. Computer Science Honours, B.Sc. Physics General, B.Sc. Chemistry General, B.Sc. Microbiology General, B.Sc. Computer Science General, B.Sc. Electronics General.
5. **Cut off percentage for admission in different courses in participating departments:**

Sl No	Course	Admission Criteria (2019-20)
1	B.Sc. Physics Honours	H. S. Aggregate - 70%, H. S. Physics- 70%, H. S. Mathematics - 70%
2	B.Sc. Chemistry Honours	H. S. Aggregate - 70%, H. S. Chemistry - 70%
3	B.Sc. Industrial Chemistry Honours	H. S. Aggregate - 60%, H. S. Chemistry - 60%
4	B.Sc. Microbiology Honours	H. S. Biology - 70%, H. S. Chemistry - 70%
5	B.Sc. Computer Science Honours	H. S. Aggregate - 60%, H. S. Mathematics - 60%
6	B.Sc. Physics General	H. S. Physics- 70%
7	B.Sc. Chemistry General	H. S. Chemistry – pass marks
8	B.Sc. Microbiology General	H. S. Biology - 60%, H. S. Chemistry – pass marks
9	B.Sc. Computer Science	---



	General	
10	B.Sc. Electronics General	H. S. Physics- 50%

**6. List of Projects undertaken by students, industrial visit by students, summer training by students in last one year:**

**1) Individual Summer Training/vocational training :**

Serial No.	Name of the Students & Dept.	Name of the Industry (Industrial training)	Duration
1	Dipayan Chatterjee (Industrial Chemistry)	Emami Cement Ltd	01.10. 2019 – 16.11.2019
2	Biswarup Dutta (Industrial Chemistry)	Vesuvius India Ltd	14.10. 2019 – 16.11.2019
3	Soumyadeep Sur (Industrial Chemistry)	Century Industrial Products Pvt. Ltd.	10.10. 2019 – 16.11.2019
4	Subhajit Bag (Industrial Chemistry)	H & R Johnson (India)	10.10. 2019 – 16.11.2019
5	Samaresh Ghana (Industrial Chemistry)	H & R Johnson (India)	10.10. 2019 – 16.11.2019
6	Ritankar Mal (Industrial Chemistry)	Emami Cement Ltd	01.10. 2019 – 16.11.2019
7	Bishal Bhangi (Industrial Chemistry)	Century Industrial Products Pvt. Ltd.	10.10. 2019 – 16.11.2019
8	Sourjyadeep Kundu (Industrial Chemistry)	ACC Ltd	10.10. 2019 – 16.11.2019
9	Arindam Saha (Industrial Chemistry)	Calderys India Refractories Ltd	14.10. 2019 – 16.11.2019
10	Pratap Sharma (Industrial Chemistry)	Vesuvius India Ltd	14.10. 2019 – 16.11.2019
11	Ratul Sinha (Industrial Chemistry)	Dalmia Cements Ltd	14.10. 2019 – 16.11.2019
12	Ashis Halder (Industrial Chemistry)	ACC Ltd	10.10. 2019 – 16.11.2019



13	Agaman Chakraborty (Industrial Chemistry)	Emami Cement Ltd	01.10. 2019 – 16.11.2019
----	--	------------------	-----------------------------

2) Industrial Visit by our students :

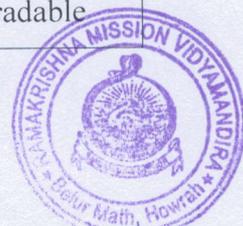
SI No	Dept. and students involved	Details of visit
1	UG 3 <sup>rd</sup> yr Industrial Chemistry (Hons.) students	Industrial visit to 'IRMRA' (Indian Rubber Manufacturers Research Association), Ministry of Commerce and Industry, Govt. of India, Dhulagarh, Howrah, West Bengal on 25.07.2019
2	UG 2 <sup>nd</sup> yr Microbiology (Hons.) and Zoology (Hons.) students	Industrial visit to Domino's Pizza (a fermentation based food industry), Dhulagarh, Howrah, West Bengal on 16.01.2020

3) List of projects undertaken in this project :

Serial No.	Dept.	Name of the Students	Project stage-I (Literature review and presentation)
1	Industrial Chemistry	Dipayan Chatterjee	Synthesis and Luminescence properties of $\text{Ca}_{14}\text{Zn}_6\text{Ga}_{10}\text{O}_{35}:\text{Mn}^{4+}$ red phosphor
2	Industrial Chemistry	Biswarup Dutt	Photoluminescence and cathodoluminescence properties of a rare-earth free red-emitting $\beta\text{-Zn}_3\text{B}_2\text{O}_6:\text{Mn}^{2+}$ phosphor
3	Industrial	Soumyadeep Sur	Photoluminescence properties



	Chemistry		of Mn <sup>4+</sup> doped Mg <sub>2</sub> TiO <sub>4</sub> Nanoparticles
4	Industrial Chemistry	Subhajit Bag	Rare-earth free red emitting phosphor for warm WLEDs
5	Industrial Chemistry	Samaresh Ghana	Development of rare earth-free hybrid semiconductor phosphors for solid state lighting applications
6	Industrial Chemistry	Ritankar Mal	Photoluminescence properties of Mn <sup>4+</sup> doped Mg <sub>2</sub> TiO <sub>4</sub> phosphor
7	Industrial Chemistry	Bishal Bhangi	Rare earth free self-activated white emitting phosphor under single excitation
8	Industrial Chemistry	Sourjyadeep Kundu	Sol-gel derived efficient red phosphor Mg <sub>2</sub> TiO <sub>4</sub> :Mn <sup>4+</sup>
9	Industrial Chemistry	Arindam Saha	Synthesis and luminescence properties of rare-earth free yellow-green emitting NaZnPO <sub>4</sub> :Mn phosphor
10	Industrial Chemistry	Pratap Sharma	Development of novel rare-earth-free tunable-color-emitting BCNO Phosphors
11	Industrial Chemistry	Ratul Sinha	Photoluminescence properties of (K,Rb) <sub>2</sub> Ge <sub>4</sub> O <sub>9</sub> :Mn <sup>4+</sup> phosphor
12	Industrial Chemistry	Ashis Halder	A Novel Efficient Mn <sup>4+</sup> activated Ca <sub>14</sub> Al <sub>10</sub> Zn <sub>6</sub> O <sub>35</sub> phosphor:
13	Industrial Chemistry	Agaman Chakraborty	Synthesis of rare earth free K <sub>2</sub> Ge <sub>4</sub> O <sub>9</sub> :Mn <sup>4+</sup> phosphor for warm white -LEDs
14	Microbiology	Amritendu Ganguli,	Production of biodegradable



			plastics by PHB accumulating bacteria using low cost agricultural products
15	Microbiology	Subhasish Roy and Arnab Mondal	Isolation and production of bioactive compounds from <i>Actinomycetes</i> .
16	Microbiology	Biswajit Biswas, Souvik Mitra, Sumit Rakshit	Isolation of bacteria from soil and its effect on plant growth promotion.
17	Microbiology	Rohit Chel and Mahadeb Mandi	Isolation and characterization of cadmium resistant bacteria from lilluah scrapyard soil sample
18	Microbiology	Suvam Saha and Pallab Majhi	Screening, characterization and identification of Bacteriocin producing LABs with probiotic efficiency
19	Microbiology	Chirantan Maity	Characterization and antimicrobial activity of biologically synthesized nano particles from microorganisms
20	Microbiology	Shuvam Chakraborty	Screening of potential plant growth promoting Rhizobacteria from soil
21	Computer Science	Ratul Goswami, Abhigyan Ghosh	Design and realization of an electronic attendance system based on RFID
22	Computer Science	Arindam Nandy, Subhankar Shyamal	Automatic question paper generator app
23	Computer Science	Suranjan De, Saikat Majumdar, Saswato Das	Adding layers in Neural Cryptography Using different nature inspired Optimizers



24	Computer Science	Pradyumna Banerjee, Chirantan Chatterjee, Supratim Basu	Online Departmental Library Management System
----	------------------	---	---

7. Training received by faculty from participating departments:

SL No	Faculty name & Dept	Training received	Duration
1	Uttam Kumar Ghorai Industrial Chemistry dept	Workshop training on Recent Advancement in Science & Technology	20 <sup>th</sup> & 21 <sup>st</sup> April, 2019
2	Sarbajit Manna Computer Science Department	Swayam NPTEL SPOC Workshop(EZ) organised by IIT, Kharagpur	27 <sup>th</sup> July 2019
3	Sarbajit Manna Computer Science Department	Swayam NPTEL SPOC Workshop(EZ) organised by IIT, Kharagpur	4 <sup>th</sup> February 2020
4	Avishek Barman Computer Science Department	Workshop Indian School on Internet Governance 2019	15 <sup>th</sup> to 17 <sup>th</sup> November 2019
5	Atanu Mondal Computer Science Department	Faculty Orientation Program, Calcutta University	18 <sup>th</sup> November to 7 <sup>th</sup> December 2019

8. List of exhibitions/seminars/training courses conducted by the college:

Sl. No.	Department	Date	Topic	Speakers	Type of the Seminar	Type
1	Industrial Chemistry	20 <sup>th</sup> & 21 <sup>st</sup> April	Recent Advancement	Prof. Asok K. Malik, Prof.	State Level	Workshop



		2019	in Science & Technology	Indranil Manna, Prof. Tanushri Saha Dasgupta, Prof. Rahul Banerjee, Prof. H.S. Maiti, Prof. Bikramjit Basu, Prof. Surajit Ghosh, Prof. Santanu Dhara		
2	Industrial Chemistry	30 <sup>th</sup> September 2019	Some recent development on Elastometric Materials	Dr. Amit Das, Senior Scientist, Leibniz Institute of Polymer Research Dresden, Germany	International	Seminar
3	Chemistry & Industrial Chemistry	3 <sup>rd</sup> January 2020	R&D Career abroad post-BSc./MSc. and guidance on right skill-sets	Dr. Rajsekhar Paul, Senior Principal Scientist, Novartis Pharmaceutical Ltd., Basel, Switzerland	Institutional	Industry-related Training Workshop
4	Computer Science	13 <sup>th</sup> November 2019	Scale To Next Significant Platform Of Technology	Dr. Arpan Pal, Dr. Somnath Mukhopadhyay, Prof. Akshaya Nayak, Dr. Shams Raza	State Level	Seminar
5	Computer Science	29 <sup>th</sup> July 2019	Counting Low Frequency Items In A Datastream	Dr. Sutanu Gayen	Institutional	Seminar
6	Computer Science	18 <sup>th</sup> February 2020	Information Processing In the Paradigm of Computational Biology	Dr. Kartik Chandra Mondal	National Level	Seminar
7	Computer Science	19 <sup>th</sup> February 2020	Information Processing In Computational Biology	Prof. (Dr.) Anirban Mukhopadhyay	National Level	Workshop
8	Microbiology	20 <sup>th</sup> July 2019	Recombinant DNA Technology	Dr. Abhinaba Ghosh, Research Scientist,	Institutional	Departmental Seminar



9	Microbiology	13 <sup>th</sup> March 2020	Fascinating Facts of Teaching Biology	University of London, UK Dr. Gautam Basu, Professor, Department of Biophysics, Bose Institute	State Level	Faculty Development Program
10	Physics	4 <sup>th</sup> August 2019	The Quantum Indians		Institutional	Motivational Documentary
11	Chemistry	15 <sup>th</sup> February 2020	Chemistry of Biology in Cyberpace: Lesson from Molecular Dynamics Simulations	Prof. Subhra Ghosh Dastidar, Division of Bio-Informatics, Bose Institute	Institutional	Departmental Seminar
12	Statistics	18 <sup>th</sup> February 2020	Big Data Analytics	Sri Amitabha Tripathi, Consultant, Tredence: Analytics Services and Solutions Company	Institutional	Departmental Seminar
13	Physics, Chemistry, Industrial Chemistry & Applied Chemistry	28 <sup>th</sup> February 2020	Topics on Materials Science	Dr. Samir Kumar Pal, Senior Prof. S.N. Bose Centre for Basic Science	Institutional	Seminar Lecture

**9. Name, Designation, host institute of guest faculty invited:**

Name	Designation	Host institute of Guest Faculty	Invited by
Prof. (Dr.) Tapan Kumar Paria	Director	School of Energy and Environmental Science, Maulana Abul Kalam Azad University of Technology (MAKAUT), W.B.	Department of Industrial Chemistry, RKM Vidyamandira
Prof. (Dr.) Sudip Kumar Das	Professor	Chemical Engg dept, Univeristy of Calcutta	Department of Industrial



			Chemistry, RKM Vidyamandira
Prof. (Dr.) Jnan Prakash Naskar	Professor	Department of Chemistry, Jadavpur University	Department of Industrial Chemistry, RKM Vidyamandira
Dr. Abhijit Bandhopadhyay	Associate Professor	Department of Polymer Science & Technology, University of Calcutta	Department of Industrial Chemistry, RKM Vidyamandira
Dr Pratap Kr Das	Ex Senior Research Scientist	IICB, Kolkata, West Bengal	Department of Microbiology, RKM Vidyamandira
Dr Pranab Kr Mukherjee	Associate Professor	Dept of Zoology, Serampore College, Hooghly, West Bengal	Department of Microbiology, RKM Vidyamandira
Dr Subhobrato Biswas	Ex Associate Professor	Dept of Chemistry, City group of College, Kolkata, west Bengal	Department of Microbiology, RKM Vidyamandira

10. **Date of Advisory committee meeting :** The meeting has been postponed due to COVID-19 outbreak.

11. **List of New Practicals/demonstrations introduced in different department in last one year:**

SI No	Department	Practical introduced
1	Dept. of Industrial Chemistry	1. Synthesis of pure and $\text{Eu}^{3+}$ doped $\text{MgAl}_2\text{O}_4$ phosphor by sol-gel method 2. Phase identification and Crystallite size calculation



		<p>of crystalline powders by X-ray diffraction technique</p> <p>3. Study the photoluminescence properties of rare earth doped nanophosphor</p>
2	Dept. of Computer Science	1. 'Algorithm in Computational Biology' introduced in 'Design and Analysis of Algorithm' for 3 <sup>rd</sup> semester Computer Science (Hons.) students
3	Dept. of Microbiology	<p>1. Cell biology : Establishment of primary cell culture</p> <p>2. Cell biology : Fouelgen staining</p> <p>3. Basic Virology : Isolation of bacteriophage</p> <p>4. Mol. Biology : Estimation of DNA and RNA</p> <p>5. Genetic Engineering : Isolation of RNA</p> <p>6. Genetic Engineering : SDS PAGE</p> <p>7. Genetic Engineering : Western Blotting</p> <p>8. Bioinformatics : Various tools in Bioinformatics including drug designing</p> <p>9. Environmental Microbiology : Study of VAM</p>
4	Dept. of Physics	<p>1. Measurement of e/m by Milikan's oil drop experiment.</p> <p>2. Double slit experiment by He-Ne LASER.</p> <p>3. Balmer series and Rydberg constant measurement.</p> <p>4. Frank Hertz Experiment.</p> <p>5. Resistivity measurement (low to high) of bulk material by four probe method at different temperature.</p> <p>6. Measurement of dielectric constant.</p> <p>7. Measurement of magnetic field.</p> <p>8. Measurement of Ionization potential.</p> <p>9. Digital GM counter to measure background count.</p>

**12. Details of equipment purchased in each department from DBT grant.**



Sl. No.	Name of Equipment	Item wise Cost	Date of Purchase of Equipment	Remarks
1	Canon Printer (1pc)	14,868/-	04.03.2020	For Computer Science Dept.
2	UPS (18 pcs)	44,604/-	04.03.2020	For Computer Science Dept.
3	Computer (6 pcs)	88,146/-	12.03.2020	For Physics Department
4	UPS (4 pcs)	8,328/-	12.03.2020	For Physics department
5	Computer (6 pcs)	2,31,280/-	20.03.2020	For Computer Science Dept.
6	Computer (16 pcs)	5,43,744/-	20.03.2020	For Computer Science Dept.
	<b>TOTAL</b>	9,30,970/-		

**13. Details of books & journals subscribed from DBT grant : NIL**

**14. Qualitative improvements due to DBT support (5 salient points) :**

- 1) Undergraduate project work in different departments has been introduced under this scheme.
- 2) Industrial visit has been organized for our students of the departments of Industrial Chemistry and Microbiology.
- 3) Biotechnology-oriented components have been introduced in the syllabi of UG (Honours) courses run by different departments (eg. Microbiology, Computer Science, Physics).
- 4) A number of seminars have been organized by the participating departments.
- 5) The scheme has enhanced the overall ambience of research in the college science departments.

**15. Problems faced, if any, in implantation of the programme and utilization of DBT grant :** Procurement of lab-equipment as well as the industrial visit of our students of different departments have been postponed in the wake of the COVID-19 pandemic.

**Swami Ekachittananda**  
**Principal(offg.)**