

A CONSOLIDATED PROGRESS REPORT
ON THE
IMPLEMENTATION OF STAR COLLEGE SCHEME
(supported by Department of Biotechnology, Ministry of Science &
Technology,
Government of India, New Delhi.)

Submitted by:

ST. MARY'S COLLEGE

SHILLONG

MEGHALAYA

St. Mary's College, Shillong, accredited 'A' grade in 2005 and reaccredited an 'A' Grade in 2011 by NAAC, Bangalore, is a premier institute for women education in North East India. Four departments of the college namely, Botany, Chemistry, Physics and Zoology had been recommended by the Department of Biotechnology(DBT), Ministry of Science & Technology, Government of India, New Delhi, to receive financial support under the Star College Scheme.

For implementation of the Star College Scheme, the DBT, New Delhi sanctioned the first release of an amount of Rs. 20.00 lakhs(Rs. 5.00 lakhs per dept) under Non-recurring head and Rs. 8.00 lakhs(Rs. 2.00 lakhs per dept) under Recurring head for the financial year 2012-13. The college received the second release of an amount of Rs. 7.4088 lakhs for utilization under Recurring head by the four departments recommended DBT during the financial year 2014-15.

The objective of the Star College Scheme is to strengthen Life Science and Biotechnology education and training at the undergraduate level to encourage and attract students to pursue a career in Life Sciences.

The scheme envisages:

- To strengthen the academic and physical infrastructure to enhance the teaching and learning process of the students and to stimulate critical thinking through providing 'hands on' exposure in experimental work.
- To increase the core instrumentation resources by procuring new equipments and upgrading existing facilities.
- To provide access and exposure to students to Research Laboratories and Industries in the country.
- To provide better library facility to students and teachers in the department.
- To organize workshops/Seminars/Guest lectures for students benefit.
- To conduct field trips/excursions for students to optimise learning.

1. Name of the College: St Mary's College, Shillong

2. Name of Departments supported:

Departments of Botany

Department of Chemistry

Department of Physics

Department of Zoology

3. List of Courses run by different participating departments: Bachelor of Science (Honours & Pass Course)

4. Faculty Profile of Participating Departments:

Department of Botany

Name & Qualifications	Designation	Specialization	Experience (in years)
Ms I.B.Kharsyntiew M.Sc.	Associate Professor, HOD	Microbial Ecology	33
Dr. (Ms) A.R.Laloo M.Sc. Ph.D.	Associate Professor	Ecology	28
Dr. (Ms) M.B.Tiwari M.Sc. Ph.D	Associate Professor	Microbiology	28
Dr. (Ms) S.Rynjah M.Sc. Ph.D.	Associate Professor	Ecology	26
Ms T.Syiemlieh M.Sc.	Assistant Professor	Microbial Ecology	12

Department of Chemistry

Name & Qualifications	Designation	Specialization	Experience (in years)
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Dr (Ms) B. Bhattacharjee M. Sc Ph. D	Associate Professor, HOD	Physical Chemistry	34
Dr (Ms) I. Nongkynrih M.Sc Ph. D	Associate Professor	Organic Chemistry	32
Ms. I. Dey M.Sc	Associate Professor	Physical Chemistry	22
Dr (Ms) P. Dey M.Sc Ph. D	Associate Professor	Organic Chemistry	17
Mr. M. Sawkmie M.Sc	Assistant Professor	Organic Chemistry	8

Department of Physics

Name Qualifications	& Designation	Specialization	Experience (in years)
Dr. (Mrs) E.M.L. Buam, M.Sc. M. Phil, Ph.D	Associate Professor, HOD	Experimental & Theoretical Nuclear Physics	30
Mrs. R.Das, M.Sc	Associate Professor	Theoretical Nuclear Physics	30
Dr.(Mrs) B.Dey, M.Sc. Ph.D.	Associate Professor	Theoretical Nuclear Physics	18
Mr. C.Synrem, M.Sc. NET	Assistant Professor	Theoretical Nuclear Physics	9
Ms. D.War, M.Sc.NET	Assistant Professor	Theoretical Nuclear Physics	4

Department of Zoology

Name Qualifications	& Designation	Specialization	Experience (in years)
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Ms. A. P. Shabong M.Sc	Associate Professor, HOD	Cytogenetics	32
Dr (Ms) N.Mishra M.Sc, Ph.D	Associate Professor	Biochemistry & Parasitology	30
Ms M.R. Jyrwa M.Sc M.Phil.	Associate Professor	Limnology	20
Ms Y. Nongrum M.Sc NET	Assistant Professor	Cell Biology & Immunology	5
Mr. L. Marbaniang M.Sc NET	Assistant Professor	Cell Biology & Immunology	5

4. Admission into B.Sc. courses in participating departments:

Saint Mary's College offers equal opportunities to students irrespective of caste, creed or religious backgrounds. The admission policy followed by the college is in accordance with the norms set by the university to which it is affiliated. The college makes special provisions to admit students from remote challenged regions of the North East and to first generation learners. As per the University norm, the students are permitted to opt for honours in a subject provided they secured 45% in the subject or 50% aggregate at the qualifying examinations.

Department of Botany

Department of Chemistry

Department of Physics

Department of Zoology

5. Student Activities (Department-wise):

1. Student Activities carried out during the year 2012-13:

Department of Botany

i. Projects:

Group Project	Topic	Class/Name of the student	Submission date
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	Collection of specimens and information about ethnobotanically important plants used by the tribals of Assam, Manipur and Meghalaya.	B.Sc. 1 st Year (Hons)	20.11.2012
	Study and Identification of Plant diseases in and around Shillong	B. Sc. 2 nd Year (Hons)	20.11.2012
	Study of the plant diversity in and around Shillong by collection of plants and preparation of herbarium sheets	B. Sc. 2 nd Year (Pass)	26.9.2012
Seminar	Class Seminar on Cell Structure and Functions	B.Sc. 3 rd Year (Pass)	15.6.2012

Activity	Name & Date of the Workshop/seminar	Name of the student/class	Organizing Department/Host
Summer school/ winter school	Winter school 29 th November to 13 th December, 2012	Trolian Mawlong B. Sc 3 rd year (Honours)	Science Department, Lady Keane College, Shillong

Department of Chemistry

- Student Activities:

Activities	Purpose	Class	Date
1.Industrial visit			
Visit to NESAC Barapani, Meghalaya	To Study the application of Remote sensing	B.Sc.I Year	14 th September 2012
		B.Sc. II Year	
		B.Sc. III Year	20th October 2013

Visit to Industrial Estate	To study the process involved in the manufacture of cement	B.Sc.I Year B.Sc. II Year B.Sc. III Year
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2. Research Labs

ii) Visit to Sophisticated Analytical Instrumentation Facility ,NEHU, Shillong	To understand the working mechanism and applications of some of the instruments used in biological sciences	B.Sc. I Year B.Sc. I IYear B.Sc. II Year	11 th November, 2012
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4.Seminar /Workshops attended

1. One day seminar on “Youth Development” organized by St. Mary’s College, Shillong.	BSc. III year Honours students BSc 2 nd year and Final year students	6 th June 2013
2. A two day National seminar on “ Burning Environmental Issues : Risk to Biodiversity and Human Health with special reference to North East India” organized by St. Mary’s College, Shillong.		15 th and 16 th May 2013.

- **Guest Lectures /Invited lectures attended by students:**

Name of the guest speaker	Designation	Date	Host Institute	Topic
Dr. D Dey	Scientific officer	15.7.13	NEHU	Instrumental Techniques and their Applications.

Department of Physics:

(i) Educational/Industrial Visits

Sl. No	Date of Visit	Name of the Institution/Industry Visited	Purpose of Visit	Total No. of beneficiaries from the Visit
1	5 th December 2012	North Eastern Space Application Centre (NESAC), Govt of India, Umiam, Meghalaya	Exposure Trip	25 hons students + 4 teachers
2	24 th July 2013	Central Seismological Observatory, India Meteorological Dept, Magnetic Observatory, Govt of India, Air Force Museum	Exposure Trip	30 hons students + 6 teachers

(ii) Workshops/Hands-on Training/Summer Schools:

Sl. No.	Date	Name of the Workshop/Training	Place held	Organised by	Total No. of Beneficiaries from the Programme
1.	15 th July 2013	Workshop on “Use of Medical Physics Apparatus”	Physics Lab of the college	Physics Dept of the College	32 degree students + 8 Faculty members

2.	16 th – 20 th Sept 2013	National Workshop on “Maintenance of Opto-Analytical Instruments” -2013 (NWMOAI – 13)	St. Anthony’s College	St. Anthony’s College	3 Faculty Members (Registration Fee paid from Recurring Fund of DBT)
3.	28 th Sept 2013	Hands-on Training in Electronics	Auditorium & Physics Labs of the college	Physics Dept of the College	82 Class XII Sc students + 31 Physics Hons students + 3 Resource persons + 6 Physics teachers + 1 Lab Assistant
4.	28 th May – 2 nd June 2013	Summer School on “Welding Technology”	Lady Keane College	Lady Keane College in collaboration with Indian Welding Society New Delhi and IGNOU Institute for Vocational Education and Training, Shillong	Three 3 rd yr honours students and two Faculty members (Registration Fee paid from Recurring Fund of DBT)

(iii) Seminars:

Sl. No	Date	Seminar	Purpose	Place held	No. of Beneficiaries from the Programme
1	1 st Dec 2012	Annual Department Seminar	To train students to give presentations.	Physics Dept	29 Hons students + 5 teachers + 1 Lab Asst.
	23 rd & 24 th August 2013	National Seminar on the ‘Commemoration of the Centenary Year of Bohr’s Atomic Theory’	To provide awareness about impt scientific history.	Lady Keane College in collaboration with Physics Dept, NEHU	6 Physics honours students and two Faculty Members (Registration Fee paid from Recurring Fund of DBT)

3	7 th Nov 2013	Special Seminar on 'The Life and Contribution of Sir C.V. Raman	Same as above	Physics Dept of the College	B. Sc 2 nd yr & 3 rd yr students and Faculty members
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(iv) Guest Lectures:

Date	Guest Lecture	Topic of Lecture	Place held	Name of Guest Faculty	Designation	No. of Beneficiaries from the Programme
20 th July 2013	Guest Lecture cum Felicitation Programme (Career Guidance Programme)	Quantum Mechanics and also Career Guidance for the outgoing students	Physics Dept	Dr. James A. Blah	Retired H.O.D and well reputed Professor of Physics dept, St. Anthony's College	38 hons students + 6 teachers + 1 lab Asst + 1 Resource person.

(v) Other Students' Activities:

Sl No.	Activity	Date/Period	Topic	Students involved in the task
1	Maintenance of College Bulletin Board	Time allotted for one week w.e.f 29 th July to 3 rd August 2013	Bohr's Contribution to Atomic Theory since 2013 is a Centenary year of Bohr's atomic theory	B. Sc 3 rd yr Hons

Department of Zoology: St. Mary's College, Shillong.

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Guest Lectures /Invited lectures attended:

Name of the guest speaker	Designation	Date	Host Institute	Topic
Capt.Dapple.D.Wankhar	Captain(nursing)	12.7.13	AFMC,Pune	Career Prospects and Scope of B.Sc. nursing in Armed Forces
Mr.Jeremy Syiem	Junior Rearch Fellow, under DBT scheme	4.6.13	Synod College, Shillong	Basic Techniques in Biotechnology

3.Projects undertaken	Topic	Class / Name of the student	Submission date
Group Project work 4.Individual projects taken by B.Sc. Final Year students under IT awareness programme	i) Study of Sericulture Practices in Meghalaya	B.Sc. Final Year Students	Submitted in Dec.2012 Nov.-Dec.2012
	i) DDT and its effects	Pinky Sultana	
	ii) Mycoplasma Pneumonia	Genevieve Lakadong	
	iii) Huntingtons Chorea	Euginia Tete Syiemlieh	
	iv) Ecological Importance of wetlands	Minee Bhuyan	
	v) Disorders of Pancreatic Endocrine function	Silvary Khongjah	
	vi) Prions	Linda Sailo	
	vii) Living healthy with Asthma	Aitihun Marthong	
	viii) Programmed cell death	Vanlaldusaki	
	ix) ADD (Attention Deficit Disorder	Suzie S. Nongbet	
x)Fish Farm management	Lanangaibiang Thabah		

Student Activities carried out during the year 2013-2014:

Department of Botany

A. Projects:

Group Project	Topic	Class/Name of the student	Submission date
	Collection of specimens and information about ethnobotanically important plants used by the tribals of Assam, Manipur and Meghalaya.	B.Sc. 1 st Year (Hons)	12 th October 2013
	Collection of diseased plants in and around Shillong	B.Sc. 2 nd Year (Hons)	27 th November 2013
	Study of medicinal plants found in East, West and South Khasi Hills districts and Ri-Bhoi districts of Meghalaya	B.Sc. 3 rd Year (Hons)	12 th October 2013

B. Field Trip/Field Study:

Activity	Topic	Class	Date
Field Visit	To several farms and gardens in and around Shillong to collect specimens of diseased plants	B.Sc. 2 nd Year (Hons)	5 th December 2013
	Study of plant diversity in and around Shillong and Collection of plants	B.Sc. 2 nd Year (Pass)	15 th November 2013

	and preparation of herbarium sheets		
Field Trip	Mawphlang Sacred Grove	B.Sc. 2 nd Year (Pass)	1 st October 2013

C. Training/Workshop/Seminar conducted/attended:

Activity	Name & Date of the Workshop/seminar	Name of the student/class	Organizing Department/Host
Autumn school	Plant Science on 18 th – 31 st October 2013	Rimeia Christabel Lyngdoh and Hriiziini Monica of B.Sc.3 rd year (Hons)	Centre for Advanced Studies in Botany, Department of Botany, NEHU, Shillong
Poster Campaign	“Eat, Think and Save” to observe World Environment Day on 5 th June 2013	B.Sc. 2 nd Year (Hons)	St. Mary’s College organized by Nature Club
Debate	“Cloning-a human design to save endangered species” on 27 th July 2013	Rimeia Lyngdoh of B.Sc.3 rd year (Hons)	Shillong College
Inter College Quiz	Part of Platinum Jubilee Celebration on 8 th August 2013	B.Sc. 2 nd year (Hons)	St. Mary’s College
Inter-college seminar	“Phytoremediation” and “Allelopathy” on 8 th August 2013	Hriiziini Monica and Mary Diana Tariang of B.Sc. 3 rd year (Hons)	St. Anthony’s college
Inter-college debate	“The war against child labour cannot be won” on 17 th August 2013	B.SC. 2 nd year (Hons)	St. Mary’s College
Poster Campaign	World Environment	B.Sc. 3 rd year	St. Mary’s College

Day on 5th June 2014

Student Activities carried out during the year 2014-2015:

Department of Botany

ii. **Projects:**

Group Project	Topic	Class/Name of the student	Submission date
	Collection of specimens and information about ethnobotanically important plants used by the tribals of Assam, Manipur and Meghalaya.	B.Sc. 1 st Year (Hons)	14 th October 2014
	Informative Study about Endemic Species of North-eastern states in India		
	Study and Identification of Plant diseases in and around Shillong	B. Sc. 2 nd Year (Hons)	10 th January 2015
	Study of the plant diversity in and around Shillong by collection of plants and preparation of herbarium sheets	B. Sc. 2 nd Year (Pass)	18 th November 2014

Study of Endemic Fruits of Meghalaya B.Sc. 3rd Year (Hons) 14th October 2014

Activity	Topic	Class	Date
Field Trip	Visit to Mawphlang Sacred Grove	B.Sc. 1 st & 2 nd Year (Hons)	15 th November 2014
	Along with Scientific Venture Club	B. Sc 3 rd year (Hons)	12 th December, 2014

Activity	Name & Date of the Workshop/seminar	Name of the student/class	Organizing Department/Host
Poster Campaign	World Environment Day on 5 th June 2014	B.Sc. 3 rd year	St. Mary's College
Training	“Capacity building for Freshwater Ecosystem Conservation” on 14 th – 21 st July 2014	B.Sc 3 rd year Wandaphisha Dkhar and Meairihunlang Fancon	Shillong College, Shillong
Recipe competition	“Healthy Snacks” on 6 th September, 2014	Wandaphisha Dkhar of B.Sc. 3 rd year and Nocheng Lydia G. Momin of B. Sc 1 st year	Department of Home Science, St. Mary's college
Popular Talk	“Information Security & its prospects” on 8 th November, 2014	B. Sc 3 rd year	Department of Computer Science, St. Mary's college

Department of Chemistry

- Student Activities:

Activities	Purpose	Class	Date
1.Industrial visit	To Study the process involved in	B.Sc.I Year	12 th September 2014

the manufacture of cement B.Sc. II Year
 Visit to Mawmluh B.Sc. III Year
 Cherra Cherra Cement
 Limited (MCCL) Plant
 Cherrapunji, Meghalaya

4.Seminar /Workshops attended

1.One day seminar on “Nanotechnology ” organized by St. Mary’s College, Shillong.	BSc. 3 rd year	28 th July 2014
	BSc 2 nd year	
	BSc 1 st year	
2. Attended the annual departmental seminar at Saint Mary’s College	BSc. 3 rd year	15 th November 2014.
	BSc 2 nd year	
	BSc 1 st year	
3. “Annual Intercollege Student’s Chemistry Seminar” on 8 th November 2014	BSc 3 rd Year	8 th November 2014

• **Guest Lectures /Invited lectures attended by students:**

Name of the guest speaker	Designation	Date	Host Institute	Topic
Dr. Ayan Bhattacharjee	Associate Professor NIT Meghalaya	28.7.13	Saint Mary’s College	Nanotechnology.

Department of Physics:

(i) Educational/Industrial Visits

Sl. No	Date of Visit	Name of the Institution/Industry Visited	Purpose of Visit	Total No. of beneficiaries from the Visit
1.	10 th September, 2014	Atomic and Mineral Directorate for Exploration and Research, Nongmynsong	Exposure Trip	26 Physics honours students + 5 teachers
2.	30 th March, 2015	Umiam Stage-1 Power Station, Sumer	Exposure Trip	24 Physics honours students + 6 teachers

(ii) Workshops/Hands-on Training/Summer Schools:

Sl. No.	Date	Name of the Workshop/Training	Place held	Organised by	Total No. of Beneficiaries from the Programme
1.	1 st Dec 2014	Hands - on Training in Electronics	Physics Labs of the college	Physics Dept of the College	29 Physics Hons students + 3 Resource persons + 6 Physics teachers + 1 Lab Assistant

(iii) Seminars:

Sl. No	Date	Seminar	Purpose	Place held	No. of Beneficiaries from the
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					Programme
1	4 th June 2014	Special Seminar on “Green House Effect and Global Warming”- in commemoration of the World Environment Day	To provide awareness about the possible ways and means to reduce global warming	Physics Dept	50 Pass and Honours students + 6 teachers + 1 Lab Asst.

(iv) Guest Lectures:

Date	Guest Lecture	Topic of Lecture	Place held	Name of Guest Faculty	Designation	No. of Beneficiaries from the Programme
27 th March 2015	Exposure Programme for class XII students	“Are we alone in the Universe”	Oakville Campus, Saint Mary’s College	Mr. Rahul Chatterjee	Assistant Lecturer	87 Class XII, 5 3 rd year degree students + 7 teachers

(v) Other Students’ Activities:

Sl No.	Activity	Date/Period	Topic	Students involved in the task
1.	Orientation Programme for 3 rd year Honours students	14 th June 2014		3 rd year Physics Honours students
2.	One-day workshop organized by the Department of Chemistry, Saint Mary’s College	28 th July 2014	Nanotechnology	3 rd year Physics Honours students
3.	Orientation Programme for 1 st year Honours students	5 th August 2014		1 st year Physics Honours students
4.	Inter-department recipe	6 th September 2014	Inter-departmental	Jodie T. Ryngnga

	competition organized by the Department of Home Science		recipe competition on the occasion of National Nutrition Week	(2 nd year Physics honours student)
5.	Annual Department seminar	11th September 2014		1st, 2nd and 3rd year Physics honours students
6.	Inter-College seminar competition, organized by Department of Physics, St. Edmund's College Shillong	13th September 2014	1. "Nuclear Fission" presented by Jendeti Molsom and Kerdaris Kurbah. 2. "Higgs Boson" presented by Iashanrilin Myllemngap and Rivangelyne M. Kharnaioir	B. Sc 3rd year Physics Honours students
7.	Popular talk on Cancer and Diet, organized by the Department of Clinical Nutrition and Dietetics	16th September 2014	Combating Cancer: Dietary Strategies that prevent, cure and care	B. Sc 3rd year Physics Honours students
8.	Popular talk organized by Students Interactive Academic Committee, Saint Mary's College	20th October 2014	Social Networking and its Impact on Human Values	B. Sc 3rd year Physics Honours students
9.	Maintenance of College Bulletin Board	Time allotted for one week w.e.f. 20-25th October, 2014	Nobel Prize in Physics for the year 2014- The Blue L.E.D.	B. Sc 3rd year Physics Honours students
10.	Popular talk organized by the Department of Computer Science, Saint Mary's College	8th November 2014	Info Security and its Prospects	B. Sc 3rd year Physics Honours students

Department of Zoology:

Student Activities:

Activities	Purpose /details	Class	Date
1. Industrial visit i) Visit to Rural Research Training Centre, Umran , Ribhoi.	To study the technologies involved in various farm models (poultry, fishery, dairy, piggery, floriculture, horticulture etc.,) and to learn about the extension programmes to reach out to farmers and other rural entrepreneurs of North Eastern states	B.Sc. Final Year	31 st October, 2014
2. Research Labs i) Visit to Sophisticated Analytical Instrumentation Facility, NEHU, Shillong.	To understand the working mechanism and applications of some of the instruments used in biological sciences.	B.Sc. Second Year	21 st October 2014
3. Survey /Research organization i.) Visit to Zoological Survey of India, Shillong	To study the rich faunal diversity of North East India and also to learn in-situ preservation and collection techniques of animals.	B.Sc. First Year	23 rd July 2014
4. Seminars/workshops/Popular Talks attended	i. One day workshop on "Basic Techniques in Biotechnology" organized by Institutional Biotech Hub of St. Mary's College, Shillong.	B.Sc. Second year	
	ii. Computer Awareness Programme organized by the Dept. of Computer Science, St. Mary's College	B.Sc. Second year	9 th July, 2014
	iii. A popular talk on 'Social Networking and its Impact on Human Values' delivered by Swami Alexander Luthra, Art of Living and organised by St. Mary's College	B.Sc. Final year	15 th October, 2014.

	iv. A popular talk on "Information Security and its Prospects" organized by Dept. of Computer Science, St. Mary's College.	B.Sc. Final year	8 th Nov.2014
	v. A popular talk on "Combating Cancer: Dietary Strategies that prevent, cure and care" delivered by Dr. Judita Syiemlieh, organized by the Dept. of CN&D of St. Mary's College.	B.Sc. Second year	6 th Sept.2014
	vi. An Orientation Programme held at Siloam, Barapani, East Khasi Hills, organized by St. Mary's College.	B.Sc. Third year.	14 th June 2014

Students Projects:

Class Projects/class seminars	Topic	Class/Name of the student	Date of Submission
Class Seminars 2013-2014	Ex-situ Conservation of animals	Iuli Lyngdoh	Nov.2013
	In-situ preservation methods	M.Mankhan Niang	"
	Osmoregulation in fishes	Shantina Sangma	"
	Gene Cloning	Junmen Longri	"
	Air Pollution	Beris	"
	Wildlife Conservation	Chandeno Patton	"
	In-Vitro Fertilization	Visitono Kin	"
	Teratogenesis	Sr. Komuni	"
	DNA Fingerprinting	Successful Natep	"
	Integrated Pest Management	Gracefulmary Syiemlieh	"
Mechanism of Digestion and Absorption of Dietary Components	Ibalapynshai Warlarpih	"	

Group project	Collection and Identification of fossils from Lawbah, East Khasi Hills.	BSc. Final Year	Dec.2014
Class Seminars 2014-2015	Hepatitis B	Tannya D. Shira	Dec.2014
	Child Labour	Pringranchi D. Marak	„
	Wilson Disease	Sr. Ruma Christina Costa	„
	Pulmonary tuberculosis	Vamesa K. Marak	„
	Ebola virus	Pinky Pandey	„
	Swine Flu virus(H1N1)	Hoithianmon	„
	Pure Technology	Nginiaiphyrmailin Kharshiing	„
	Human Trafficking	Lallawmpuii Pachuau	„
	Biometric Technology	Ruby Laldingliani	„
	AIDS	Christine Manar	„
	Major Biomes	BSc. Final year students	Nov.2014

6. Teachers Activities (Department-wise):

Department of Botany:

Activity	Name & Date of the Workshop/seminar conducted/attended	Name of Faculty	Organizing Department/Host
Workshop	“Faculty training and motivation and adoption of school and colleges by CSIR labs” on 21 st - 22 nd March 2013	Mrs. I.B.Kharsyntiew Dr. Mrs. A.R.Laloo Dr. Mrs. M.B.Tiwari Dr. Ms. S. Rynjah	CSIR- NEIST Jorhat Assam St. Edmund’s college
National Seminar	“Burning Environmental issues- Risk to Biodiversity and human health with reference to North East India” on 15 th -16 th May 2013	Mrs. I.B.Kharsyntiew Dr. Mrs. A.R.Laloo Dr. Mrs. M.B.Tiwari Dr. Ms. S. Rynjah	St. Mary’s college collaborated with State Council of Science Technology and Environment, Shillong
Seminar	“Youth development on	Dr. Mrs. M.B.Tiwari	St. Mary’s College

	6 th June 2013	Dr. Ms. S. Rynjah	
Workshop	“Instrumental Techniques and their applications” on	Dr. Mrs. M.B.Tiwari Dr. Ms. S. Rynjah	Chemistry Department, St. Mary’s College
	15 th July 2013	Ms. T. Syiemlieh	
Poster Presentation	“Technological innovations in shifting agricultural practices by three tribal farming communities of Meghalaya at Baltimore, Maryland , USA on	Dr. Mrs. M.B.Tiwari	International Congress for Conservation Biology
	21 st – 25 th July 2013		
Inter-college Seminar	“Phytoremediation” and “Allelopathy” on	Ms. T. Syiemlieh Ms. G. Marbaniang	St. Anthony’s college
	8 th August 2013		
Workshop	“Revision of school curriculum in the light of CCE (elementary level)” on	Dr. Ms. S. Rynjah	Director Educational Research and Training, Shillong
	16 th -21 st September 2013		
Popular Talk	“Plant Microbes Interaction” by	Mrs. I.B.Kharsyntiew Dr. Mrs. A.R.Laloo Dr. Mrs. M.B.Tiwari	Botany Department, St. Mary’s college
	Dr. P.L.Nongbri on	Dr. Ms. S. Rynjah	
	24 th October 2013	Ms. T. Syiemlieh & All Honours Students	
Departmental Seminar	On 6 th November 2013	Mrs. I.B.Kharsyntiew Dr. Mrs. A.R.Laloo Dr. Mrs. M.B.Tiwari Dr. Ms. S. Rynjah Ms. T. Syiemlieh &	Botany Department, St. Mary’s college

		B.Sc. 3 rd year (Hons)	
Workshop	“Technological empowerment of women through the SoRF scheme of DST in collaboration with NASI” on 30 th June 2014	Ms. T. Syiemlieh Ms. G. Marbaniang	NEHU, Shillong
Seminar	“Nanotechnology” on 28 th July 2014	Ms. T. Syiemlieh Ms. G. Marbaniang	Chemistry Deptt, St. Mary’s College
Training	“Capacity building for Freshwater Ecosystem Conservation” on 14 th – 21 st July 2014	Ms. T. Syiemlieh	Shillong College, Shillong.
Hands on training	“Tools and Techniques in Life Science” on 11 th – 15 th September 2014	Dr. Mrs. A.R.Laloo Dr. Mrs. M.B.Tiwari Dr. Ms. S. Rynjah Ms. T. Syiemlieh Ms. G. Marbaniang	IBT Hub of St. Mary’s college
Popular Talk	“Cancer and Diet” on 16 th September, 2014	Dr. Mrs. M.B.Tiwari Ms. T. Syiemlieh	Students Interactive Committee of St. Mary’s college
Popular Talk	“Social Networking and its impact on human values” on 20 th October 2014	Ms. T. Syiemlieh	St. Mary’s College
Book fair	Held on 2 nd August 2014	Ms. T. Syiemlieh Ms. G. Marbaniang	St. Anthony’s College
Orientation Programme	20 th August 2014 at Siloam, Barapani.	Mrs. I.B.Kharsyntiew Dr. Mrs. A.R.Laloo	St. Mary’s College

Dr. Mrs. M.B.Tiwari

Dr. Ms. S. Rynjah

Ms. T. Syiemlieh

Ms. G. Marbaniang

Ongoing Research Project **“Identification of soil mycorrhiza and study of fungal association in *Fagopyrum dibotrys* and *Oenanthe javanica*”** Ms. Tiewlyngksiar Syiemlieh & Ms. Gerandia Marbaniang Botany Department & Biotech Hub, St. Mary’s college

Other activities Preparation of practical manuals for students according to the Undergraduate syllabus prescribed by the University All the members of faculty

Dated:2013-14

Department Of Chemistry:

Activities	Name & Date of the Workshop/Seminar	Name of faculty	Organizing Dept./ Host Institute
i.Seminar/Workshop/ Summer school attended	1. Summer School Dated- 22 nd August to 11 th September,2012	Mr. M L Sawkmie	Organized by Academic Staff College, NEHU, Shillong
	2. Attended the Symposium on Inorganic Chemistry at Interface, Dated-13 th -14 th October 2012	Dr. B Bhattacharjee	Organised by Department of Chemistry, IIT Kharagpur
	3. Attended a symposium on “ Historical Aspects Of Chemistry and its Future Perspectives”	Dr. B. Bhattacharya Dr. P. Dey	Organized by St. Edmund’s College

Dated-15th October 2012

4. A two day Workshop on “Faculty Training and Motivation and Adoption of Schools and Colleges by CSIR Labs” Dated-27 th &28 th November 2012	All the faculty of the department	Organized by CSIR- NEIST, Jorhat, Assam. Venue- St. Anthony’s College,Shillong
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5. One day Seminar on “Youth Development” held as a part of Platinum Jubilee celebrations of St. Mary’s College Dated-6 th June 2013	The faculty of the department	Organized by St.Marys College ,Shillong
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6. One day workshop on “Instrumental Techniques and their Applications” Dated- 18 th July 2013	The faculty of the department	Organized by department of Chemistry, St. Mary’s College, Shillong.
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7. One day workshop on “Nanotechnology” on 28th July 2014	Faculty of the Department	Dept. Of Chemistry Saint Mary’s College Shillong
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8. Study Tour to MCCL Cherrapunji Meghalaya on 12 th September 2014	Dr. B Bhattacharjee Ms I Dey Dr P Dey Mr M L Sawkmie	MCCL Cherrapunji Meghalaya
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9.	Participated in A “ Hands on Training on the tools and techniques in Life Sciences” on 15 th September 2014	Dr. B Bhattacharjee Dr P Dey Mr M L sawkmie	Institutional Biotech Hub, Saint Mary’s College Shillong
10.	Workshop on evaluation and paper setting on the 4 th and 5 th December 2014	Dr I Nongkynrih	Organised by Examination Department NEHU Shillong
11.	“Annual Inter-college Student’s Chemistry Seminar” on 8 th November 2014	Dr. B Bhattacharjee Ms I Dey	Organised by Examination Department NEHU Shillong
12.	Annual Department Seminar on 15 th November 2014	Faculty of the department	Saint Mary’s College
ii. Other activities	Preparation of practical manuals for students according to the Undergraduate syllabus prescribed by the University	All the members of faculty	
	Dated:2013-14		

Department of Physics:

(i) Workshops, Seminars attended:

Sl. No.	Name of the program attended	Date	Faculty attended
1	Faculty Training and Motivation of Schools and Colleges by CSIR Labs organized by CSIR-NEIST (North East Institute of Science & Technology) Jorhat at St. Anthony’s College, Shillong	27 th – 28 th November 2012	Faculty of the Department
2	21 st Orientation programme organized by UGC-ASC NEHU, Shillong	4 th Feb to 3 rd March 2013	Ms. D. A. War
3	National Workshop on Particle Physics	21 st - 23 rd	Dr. (Mrs.) B. D.

	organized by St. Anthony's College, Shillong	March 2013	Chowdhury, Mr. C. G. Synrem & Ms. D. A. War
4	National Seminar on "Burning Environmental Issues: risk to biodiversity with special reference to North East India" organized by Saint Mary's College, Shillong	15 th and 16 th May 2013	Faculty of the Department
5	Summer School on "Welding Technology" organized by Lady Keane College, Shillong	28 th May – 2 nd June 2013	Mr. C. G. Synrem & Ms. D. A. War
6	Refresher Course in Physics organized by UGC-ASC NEHU, Shillong	5 th - 25 th June 2013	Mr. C. G. Synrem
7	Seminar on 'Youth Development' organized by Saint Mary's College, Shillong	6 th June 2013	Faculty of the Department
8	National Seminar on the 'Commemoration of the Centenary Year of Bohr's Atomic Theory' organised by Lady Keane College, Shillong	23 rd & 24 th August 2013	Dr. (Mrs.) B. D. Chowdhury & Mr. C. G. Synrem
9	National Workshop on "Maintenance of Opto-Analytical Instruments" -2013 (NWMOAI – 13) organized by St. Anthony's College, Shillong	16 th – 20 th Sept 2013	Mr. C. G. Synrem, Ms. D. A. War & Mr. T. O. Thangkhiew
10	Orientation Programme for the 3 rd year B.Sc students in Siloam, Barapani, Meghalaya	14 th June 2014	Ms. D. A. War
11	Inter-college Mathematics Quiz Competition "Mathequiz" organized by the Department of Mathematics, Saint Mary's College, Shillong	26 th July 2014	Ms. D. A. War
12	Workshop on Nanotechnology organized by Department of Chemistry, Saint Mary's College	28 th July 2014	Mr. C. G. Synrem
13	Orientation Programme for the 1 st year B.Sc students of Saint Mary's College, Shillong	5 th August 2014	Faculty of the Science Departments
14	Faculty Development Programme and Celebration of Good Results in Siloam, Barapani, Meghalaya	20 th August 2014	Dr. (Mrs.) E. M. L. Buam, Dr. (Mrs) B. D. Chowdhury, Mr. C. G. Synrem, Ms. D. A. War, Mr. T. O. Thangkhiew
15	Inter-College seminar competition, organized by the Department of Physics, St. Edmund's College Shillong	13 th September 2014	Ms. D. A. War
16	Popular Talk on "Social Networking and its impact on Human Values" organized by the Students Interactive Academic Committee, Saint Mary's College, Shillong	20 th October 2014	Ms. D. A. War
17	"Introduction to tools and techniques in Biological Science" organized by Institutional Biotech Hub, Saint Mary's College, Shillong at St. Francis De Sales Secondary School,	20 th March 2015	Mr. C. G. Synrem

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(ii) Workshops, seminars conducted:

Sl. No.	Name of the program conducted	Date	Faculty conducting the program
1	Exposure trip to North Eastern Space Application Centre (NESAC), Govt of India, Umiam, Meghalaya	5 th December 2012	Dr. (Mrs.) E. M. L. Buam, Ms. R. Das, Mr. C. G. Synrem, Ms. D. A. War
2	Exposure Trip to RRTC, Umsning, Meghalaya organized by	12 th December 2012	Mr. C. G. Synrem & Ms. D. A. War
3	Workshop on "Use of Medical Physics Apparatus"	15 th July 2013	Faculty of the Department
4	Guest Lecture cum Felicitation Programme (Career Guidance Programme)	20 th July 2013	Faculty of the Department
5	Exposure trip to Central Seismological Observatory, India Meteorological Dept, Magnetic Observatory, Govt of India, Air Force Museum	24 th July 2013	Faculty of the Department
6	Hands-on Training in Electronics	28 th September 2013	Dr. (Mrs.) E. M. L. Buam, Ms. R. Das, Mr. C. G. Synrem, Ms. D. A. War, Mr. T. O. Thangkhiew
7	Special Seminar on 'The Life and Contribution of Sir C.V. Raman	7 th Nov 2013	Faculty of the Department
8	Workshop on "Revision of ClassXI and ClassXII Textbooks" held at DERT, organized by MBOSE Shillong.	3 rd -12 th March 2014	Mr. C. G. Synrem
9	Special Seminar on "Green House Effects and Global Warming" organized as part of the World Environment Day	4 th June 2014	Faculty of the Department
10	Educational trip to Atomic and Mineral Directorate for Exploration and Research, Nongmynsong, Shillong	10 th September 2014	Dr. (Mrs.) E. M. L. Buam, Ms. R. Das, Dr. (Mrs.) B. D. Chowdhury, Mr. C. G. Synrem, Mr. T. O. Thangkhiew
11	Annual Departmental Seminar	11 th September 2014	Faculty of the Department
12	Quiz Competition for the Scientific Venture Club members of the College	21 st September 2014	Mr. C. G. Synrem
13	One-day Hands-on Training in Electronics	1 st December 2014	Faculty of the Department
14	A two-day workshop on "Evaluation and Paper Setting" held at NEHU, organized by Examination Dept, NEHU, Shillong	4 th & 5 th December, 2014	Dr. (Mrs.) E. M. L. Buam
15	Exposure Trip to Umiam Stage-I Power	12 th December	Mr. C. G. Synrem & Ms.

	Station, Sumer organized by Scientific Venture Club, Saint Mary's College	2014		D. A. War
16	Exposure Programme for the Class XII Science Students of Saint Mary's College	27 th 2015	March	Faculty of the Department
17	Educational trip to Umiam Stage-I Power Station, Sumer, Meghalaya	30 th 2015	March	Faculty of the Department

Other activities:

1	Preparation of practical manuals for students according to the Undergraduate syllabus prescribed by the University	All the members of faculty	2013-14
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Department of Zoology:

Activities	Name & Date of the Workshop/Seminar	Name of faculty	Organizing Dept./ Host
i. Seminar/Workshop/ Summer school attended	1. Summer School Dt- 22 nd August to 11 th September 2013	Mr. Liston Marbaniang	Organized by Academic Staff College, NEHU, Shillong.
	2. A two day Workshop on "Faculty Training and Motivation and Adoption of Schools and Colleges by CSIR Labs" Dt.-21 st & 22 nd March 2013	The faculty of the department	Organized by CSIR- NEIST, Jorhat, Assam. Venue- St. Edmund's College, Shillong.
	3. One day Seminar on "Youth Development" held as a part of Platinum Jubilee celebrations of St. Mary's College Dt.-6 th June 2013	The Faculty of the department	Organized by St. Mary's College, Shillong
	4. One day workshop on "Instrumental Techniques and their Applications" Dt.- 18 th July 2013	Mrs. A.P. Shabong & Dr. (Mrs.) Neerja Mishra	Organized by department of Chemistry, St. Mary's College, Shillong.
	5. A National Workshop on "Maintenance of Opto-Analytical Instruments" Dt.-14 th to 21 st September 2013	The faculty of the department	Organized by department of Chemistry, St. Anthony's College in association with Western Regional Instrumentation Centre, Mumbai

6. A two day International Workshop on: Women in Leadership- the unknown women. Dt: 23 rd & 24 th October, 2013.	Mrs. A.P. Shabong	Organized by the German Development Corporation (GIZ) and facilitated by - Academy of Human Excellence at the Asian confluence, based at Baroda, Gujrat.
7. Workshop on “Revision of ClassXI and ClassXII Textbooks” Dated: 3 rd -12 th March 2014	Ms. A.P. Shabong & Ms. M.R. Jyrwa	Held at DERT, organized by MBOSE Shillong.
8. Seminar on ‘Technological Empowerment of Women through SoRF Scheme of DST’ Dated: 24 th June, 2014	Ms. M.R. Jyrwa and Ms. Y.B. Nongrum	Organised by DST in collaboration with NASI at NEHU
9. Seminar on “Nanotechnology” Dated: 28 th July, 2014	Ms. A.P. Shabong & Dr. N. Mishra	Organized by the Dept. of Chemistry, St. Mary’s College
10. An Orientation Programme held at Siloam, Barapani, East Khasi Hills Dated: 20 th Aug, 2014	All the members of faculty	Organized by Saint Mary’s College
11. A popular talk on ‘Combating Cancer: Dietary strategies that prevent, cure and care’ Dated: 6 th September, 2014	Dr. N. Mishra & Ms. M.R. Jyrwa	Organised by Dept. of Clinical Nutrition & Dietetics, St. Mary’s College.
12. A training programme on “Hands-on Training on the tools and techniques in Life Sciences” Dated: 11 th -15 th September, 2014	All the members of faculty	Organized by Institutional Biotech Hub, St. Mary’s College.
13. A two-day workshop on “Evaluation and Paper Setting” held at NEHU, Dated: 4 th & 5 th December, 2014	Mrs. A.P. Shabong and Dr. N. Mishra	Organized by Examination Dept, NEHU, Shillong

	14.30 th Orientation programme Dated: 29 th January-25 th February, 2015	Ms.Y.B.Nongrum	Organized by UGC- Academic Staff College, NEHU
ii. Other activities	Preparation of practical manuals for students according to the Undergraduate syllabus prepared by the University Dated: 2013-14	All the members of faculty	

7.Advisory Committee Meeting: Scheduled on 23rd, June 2015.

Composition of Advisory Committee

Chairperson: Dr. (Sr) Mary Harriet, Principal, Saint Mary's College.

Overall Coordinator: Mrs. Aiom P Shabong, Head of Department of Zoology.

DBT Representatives: i) Dr. Sandhya Shenoy, DBT, New Delhi.

External Experts: i) Dr. N.Saha, Professor, HOD, Department of Zoology, NEHU, Shillong
ii) Dr. S. R. Joshi, Associate Professor, Department of Biotechnology, NEHU.

Department Coordinators:

Botany: Mrs I.B. Kharsyntiew,HOD

Chemistry: Mr. Micky L. Sawkmie

Physics: Ms. D. A. War

Zoology: Dr N.Mishra

Faculty Members:

Botany: Dr A.R.Laloo, Dr M.Tiwari, Dr S.Rynjah, Mrs T.Syiemlieh

Chemistry: Dr I.Nongkynrih, Ms I.Dey, Dr P.Dey, Mr M. Sawkmie

Physics: Mrs R.Das, Dr B. Dey, Mr C. Synrem, Ms D.War

Zoology: Mrs M.R.Jyrwa, Mrs Y.B.Nongrum, Mr L Marbaniang

8. List of New Practicals introduced:

Department of Botany

Class List of new practicals

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| 1.B.Sc 1 st year
(Honours) | Collection of specimens and information about ethnobotanically important plants used by the tribals of Assam, Manipur and Meghalaya.

Informative Study about Endemic Species of North-eastern states in India |
| 2. B. Sc 2 nd year
(Honours) | Study and Identification of Plant diseases in and around Shillong |
| 3.B. Sc 2 nd year
(Pass) | Study of the plant diversity in and around Shillong by collection of plants and preparation of herbarium sheets |
| 4..B.Sc 3 rd year
(Honours) | Study of Endemic Fruits of Meghalaya |

Department of Physics

a) The department, through the Hands-on trainings in Electronics on 28th September 2013 and 1st December 2014, has been able to step further to enrich students knowledge and understanding of practical application of basic electronics through the following projects, demonstrated by Electronics Experts:

- i. Use of Bread Boards in making any electronic circuit. The UG students were trained to do the following projects using Bread Board
 - a. Rain Alarm
 - b. Traffic Light
 - c. Flashing LED
 - d. Burglar Alarm
 - e. Dummy Alarm
 - f. Model Lighthouse
 - g. Study of Logic Gates and Verification of Truth tables
 - h. Study of Full Adder Circuit
 - i. Study of Half Adder Circuit

- j. Study of Logic Gates OR, AND, NOR, NAND, using Bread Board.
- ii. To assemble and make a kit for the component Power Supply.
- iii. To study regulated power supply using regulated IC.
- iv. To study inverting and non inverting amplifier using IC 741.
- v. To study integrating and differentiating circuits using breadboard
- vi. To study Astable multivibrator using IC 555 Timer
- vii. To study mono stable multivibrator using IC 555 Timer

b) Experiment No. 10 of B. Sc 2nd yr Hons Practicals (NEHU Syllabus 2009) is on the determination of the frequency of electrically maintained tuning fork by Melde's method. The dept has plans to extend the experiment to an activity based assignment using the same apparatus to verify the laws of vibrating strings.

c) Experiment No. 14 of B. Sc. 2nd yr Hons (NEHU Syllabus 2009) is on the determination of the specific rotation of a solution by the Polarimeter is introduced fresh since the procurement of this apparatus from DBT funds. To enrich the students' learning through this experiment, an extended activity to plot a graph between the concentration and rotation for various strengths of solution is being introduced.

d) Experiment No. 14 of B. Sc. 1st Hons (NEHU Syllabus 2009) is on the determination of resistance of a mirror galvanometer by half deflection method. This experiment is being introduced fresh again after many years. In addition, an activity related assignment is given to convert it into an ammeter of desired range and to verify the same.

Department of Zoology:

- Determination of one's own blood pressure using a sphygmomanometer
- Identification and characterization of different types of white blood corpuscles from one's own blood
- Demonstration of Polymerase Chain Reaction

9. Interdepartmental activities:

Interdepartmental Activities

Activity	Participating departments	Details of activity	Date

Nature Club	Botany & Zoology	Poster display, essay writing, poetry writing, painting & photography competition, planting of saplings, cleanliness drive etc. on World Environment Day	5 th of June every year
National Seminar	Zoology, Botany, Chemistry & Geography	Topic of the seminar, “Burning Environmental Issues: Risk to Biodiversity and Human Health with special reference to North East India”	15 th and 16 th May,2013

10. Strengths and weaknesses of each department (3 each):

Department of Botany:

Strengths:

- Excellent teaching faculty, who are committed and dedicated
- Department get 100% pass results every year
- Good relationship between faculty and between faculty and students

Weaknesses:

- Lack of space
- Shortage of time to finish the syllabus
- Due to shortage of time, detailed projects taking minimum 6 months cannot be carried out

Department of Physics:

Strengths:

- The Department consists of qualified, experienced and dedicated teachers
- The department has improved infrastructure

- The Department has built up good linkages with renowned scientific institutions and highly resourceful physicists all over India. The Department being in a college affiliated to the University (NEHU), is abreast with the progress of the subject even in the research level of the University

Weaknesses:

- The intake quality of the students is generally quite poor but since the objective of the department is to encourage more students to opt for core sciences the department has to carry on with this weakness.

Department of Zoology:

Strengths:

- Qualified, Dedicated and committed faculty
- Well-equipped laboratory
- The department achieves 100% pass percentage with positions in the merit list on examinations conducted by the University.

Weaknesses:

- Physical space constraints
- Vast curriculum
- Lack of modern amenities in the existing laboratory

11. Impact of DBT support to the Science Departments (Botany, Chemistry, Physics & Zoology):

Significant improvements in the field of imparting quality education and training to the students have been achieved upon receiving DBT support. Some improvements may be listed as follows:

1. The Star College Scheme has enabled the departments to procure new equipments and it has aided in upgrading existing teaching resources which have in turn improved the 'hands on' experimental exposure of the students. This has in turn enhanced the quality of learning and teaching of the students and teachers respectively.
2. The Scheme has also enabled the departments to enrich their departmental library with additional reference books and science related journals to which students and teachers have gained quick and easy access.
3. DBT support has made it possible for the departments to organize exposure trips to relevant research laboratories and scientific institutes. The industrial visits have proved to be highly

beneficial to the students. It has widened their scope of learning and evoked in them an interest to explore the practical aspects of theoretical knowledge gained in classroom.

4. The under graduates students were able to take up small in- house projects which helped them to gain an insight into research methodology.

5. Guest lectures were organized for student benefit.

6. The grant has enabled the departments to organize workshops & student seminars and other activities.

7. The improvement of IT facilities in participating departments have motivated students and teachers to optimize their learning capabilities.

8. The funds supported under the Star College Scheme have eased the financial burden faced by the departments due to the existing budget of the institution.

12. DBT grants utilization: refer to Annexure I