

NORTH GUJARAT EDUCATION SOCIETY, MUMBAI MANAGED
SHETH MOTILAL NYALCHAND SCIENCE COLLEGE

(Affiliated To Hemchandracharya North Gujarat University, Patan)

RAJMAHEL ROAD, PATAN – 384 265 (NORTH GUJARAT - INDIA)



ANNUAL QUALITY ASSURANCE REPORT
(A.Q.A.R.)
2013-14

Submitted to
NATIONAL ASSESSMENT AND ACCREDITATION
COUNCIL, BANGALORE

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Part – A

1.Details of the Institution

1.1 Name of the Institution

SHETH MOTILAL NYALCHAND SCIENCE COLLEGE,
PATAN

1.2 Address Line 1

COLLEGE CAMPUS

Address Line 2

RAJMAHEL ROAD

City/Town

PATAN

State

GUJARAT

Pin Code

384265

Institution e-mail address

mnsc@nges-patan.org

Contact Nos.

02766-220 812 (OFFICE)

Name of the Head of the
Institution:

Dr. K. S. Parikh

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Mobile:

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Name of the IQAC Co-ordinator:

A.N.Swami

Mobile:

+91 98793 23264

IQAC e-mail address:

iqacsmnsc@gmail.com

1.3 NAAC (Track ID): GJCOGN13139

1.4 Website address:

www.mnsc.nges-patan.org

Web-link of the AQAR:

<http://mnsc.nges-patan.org/AboutAssessmentAndCredentials.aspx>

For ex. <http://www.ladykeanecollege.edu.in/AQAR201213.doc>

1.5 Accreditation Details

Sl.No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 st Cycle	B ⁺⁺	81%	2007	2012
2	2 nd Cycle	B ⁺⁺	2.74	2013	2018
3	3 rd Cycle	-	-	-	-
4	4 th Cycle	-	-	-	-

1.6 Date of Establishment of IQAC :

DD/MM/YYYY

01/04/2008

1.7 AQAR for the year (for example 2010-11)

2013-14

1.8 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((for example AQAR 2010-11 submitted to NAAC on 12-10-2011))

- i. AQAR _____ (DD/MM/YYYY)
- ii. AQAR _____ (DD/MM/YYYY)
- iii. AQAR _____ (DD/MM/YYYY)
- iv. AQAR _____ (DD/MM/YYYY)

1.9 Institutional Status

University State Central Med Private

Affiliated College Yes No

Constituent College Yes No

Autonomous college of UGC Yes No

Regulatory Agency approved Institution Yes No

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education Men Women

Urban Rural Tribal

Financial Status Grant-in-aid 2(f) UGC B

Grant-in-aid + Self Financing Self-financing

1.10 Type of Faculty/Programme

Arts Science Commerce Law PEI(Phys Edu)

TEI (Edu) Engineering Health Science Management

Others(Specify)

1.11 Name of the Affiliating University (*for the Colleges*)

Hemchandrachary North Gujarat University, Patan

1.12 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University

University with Potential for Excellence UGC-CPE

DST Star Scheme

UGC-CE

UGC-Special Assistance Programme DST-FIST

UGC-Innovative PG programmes

(specify)

UGC-COP Programmes

2.IQACComposition and Activities

2.1No. of Teachers

2.2No. of Administrative/Technical staff

2.3No. of students

2.4No. of Management representatives

2.5No. of Alumni

2. 6No. of any other stakeholder and
community representatives

2.7 No. of Employers/ Industrialists

2.8 No. of other External Experts

2.9 Total No. of members

2.10No. of IQAC meetings held

2.11 No. of meetings with various stakeholdersNo.

ulty

Non-Teaching Staff &Students

Alu

Others

2.12Has IQAC received any funding from UGC during the year?Yes

No

If yes, mention the amount

Rs.3,00,000/-

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos. International National State Institution Level

(ii) Themes

Preparation for NAAC Re-accreditation and up gradation of existing system

2.14 Significant Activities and contributions made by IQAC

- Orientation programme for counseling of Sem-I students.
- Farewell Programme for Sem-VI students.
- IQAC encouraged and motivated teachers to enhance and increase quality of teaching and research work.
- Prepared academic calendar and ensured it's in time implementation.
- Prepared plan of action and ensured the execution of plan by monitoring the activities done by various committee through regular meeting with concerned committee members.
- Faculties were encouraged to use ICT and to provide their services for BISAG lectures.

2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year *

Plan of Action	Achievements
<p>(1) Curricular Aspect</p> <p>Introduction of new certificate courses.</p> <p>Review of the syllabus of existing certificate courses.</p> <p>New syllabus of core subjects for Sem-V & VI.</p>	<p>Required changes were made.</p> <p>New syllabus was implemented from June-2013 designed by HNGU.</p> <p>The department of Biology was divided in two parts-</p>

Bifurcation of Biology department.	Botany and Zoology.
<p>(2) Teaching learning and evaluation</p> <p>-Improvisation of Teaching Learning Process.</p> <ul style="list-style-type: none"> • Remedial classes for weak & distinguished student. • Evaluation 	<ul style="list-style-type: none"> • Encouraged students participation in teaching activity-making it two way learning. • Unit wise distribution among the faculties according to their expertise. • Use of PPT and various e-contents. • Lectures were supplemented by assignments, seminars, group discussion. • Expert lectures were arranged. • Classes were successfully organised by Chemistry, Physics, and Maths departments. • Arranging more seminar, workshops, and industrial educational visits as a part of curriculum. • Continuous evaluation by assignment, quiz competitions, practical journal. • Preliminary exams were conducted before final exams. • Revision through paper solution.
<ul style="list-style-type: none"> • Research Consultancy and extension: Research: • Enhance quality 	<ul style="list-style-type: none"> • Provided motivation and guidance for research through experts. • Research Lab was strengthened with accurate and sophisticated instruments

research work and creation of research culture.	<p>like HPLC, FTIR, etc.</p> <ul style="list-style-type: none"> • Students were encouraged for minor research project. • Research journals were prescribed.
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* Attach the Academic Calendar of the year as Annexure.

2.15 Whether the AQAR was placed in statutory body Yes

Management State Any other

Provide the details of the action taken

- | |
|---|
| <ul style="list-style-type: none"> • The AQAR was placed before management. • Management approved the plan of action after detailed discussion with chairperson and co-coordinator. • Merits and demerits were identified. • IQAC was suggested to overcome certain demerits and advised to correct mistakes. • IQAC held the meeting with the staff members and decided to implement the suggestions. |
|---|

Criterion – I

1. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	2	1		
PG	2		1	1
UG	3		1	1
PG Diploma				
Advanced Diploma				
Diploma				
Certificate	4			
Others	3			
Total				
Interdisciplinary	1			
Innovative	2			

- 1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options
(ii) Pattern of programmes:

Semester ~~1~~ ~~2~~ ~~3~~ ~~4~~

Num

1.3 Feedback from stakeholders* Alumni Parents Employers Students

(On all aspects)

Mode of feedback: Online Manual Co-acting school PEI

**Please provide an analysis of the feedback in the Annexure*

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

Yes,
As per requirement syllabus was divided in three units instead of four units in physics.

1.5 Any new Department/Centre introduced during the year. If yes, give details.

Yes,

Biology department was bifurcated in two separate departments namely Botany and Zoology.

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
22+		22		

2.2 No. of permanent faculty with Ph.D.

14

2.3 No. of Faculty Positions Recruited (R) and Vacant(V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V

2.4 No. of Guest and Visiting faculty and Temporary faculty

2

4

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended	9	27	13
Presented papers	12	13	0
Resource Persons	0	1	0

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- All the staff members were provided PC.
- All the departments were provided with LCD projector, Wi-Fi Connection, Printers, pen drive, and other facilities to facilitate the use of ICT in teaching learning process.
- Expert lectures of experts from different institutions on BISAG were recorded for the use of student.
- All departments maintained continuous student evaluation programme to evaluate the progress of students.
- Special programmes for slow learners and advanced learners.
- Teachers provided study materials in form of soft copy/PPT presentation/hard copy to students.

2.7 Total No. of actual teaching days

180

during this academic year

2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

Single Evaluation

2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop

	0	9
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2.10 Average percentage of attendance of students

>80%

2.11 Course/Programme wise distribution of pass percentage :2013-14

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
B.Sc.Sem-6	315	32.7	38	22.5	1.9	4.8
M.Sc. Sem-4	38	5	31	0	0	0

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

Contribution:-

IQAC prepared formal teaching plan with the help of all HOD, which was delivered to teachers and student.

Teachers were encouraged to make ICT enabled teaching learning.

IQAC suggested teachers and students to set their goal and tried to develop required infrastructure to support the teaching learning process.

Monitoring:-

Periodic assessment of teaching learning process is done by collecting monthly reports from the teaching staff about the coverage of syllabus during that particular month. If required teachers are advised to overcome the defect.

Evaluation:-

Academic evaluation is carried out by the principal and HOD through the feedback obtained from students. IQAC analyzes the feedback and takes follow up actions.

2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	1
UGC – Faculty Improvement Programme	03
HRD programmes	01
Orientation programmes	0
Faculty exchange programme	05
Staff training conducted by the university	02
Staff training conducted by other institutions	02
Summer / Winter schools, Workshops, etc.	14
Others	All Staff

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	14	0	0	22
Technical Staff	22	0	0	03

Criterion – III

3. Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

- Institute has well organized research committee. This committee meets time to time to promote and enhance quality research culture and climate in college.
- Notifications of research project from various funding agencies were brought to the notice of teachers in order to enable them to apply for the project.
- IQAC collected information about various difficulties faced by research student and research guides of our institute and tried best to solve the difficulties.
- IQAC provided necessary help, guidance and support to teachers to avail themselves of faculty improvement programme.
- IQAC encouraged faculty to publish more research papers (in reputed journals) to attend more seminar/workshop/symposia at National and international level.
- Computerized library and infolibnet facility.

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	1	1	0	1
Outlay in Rs. Lakhs	5.92	10.91	0	10

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	3	3	0	1
Outlay in Rs. Lakhs	770000.00	425000.00	0	110000.00

3.4 Details on research publications

	International	National	Others
Peer Review Journals	29	3	0
Non-Peer Review Journals	0	1	0
e-Journals	20	0	0
Conference proceedings			

3.5 Details on Impact factor of publications:

Range Average h-index Nos. in SCOPUS

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant Sanctioned	Received
Major projects	3	UGC	7,95,800	5,19,300
Minor Projects	2	UGC	185,000	-
Interdisciplinary Projects	3	UGC	10,91,800	6,47,800
Industry sponsored	-	-	-	-
Projects sponsored by the University/ College	-	-	--	-
Students research projects <i>(other than compulsory by the University)</i>	-	-	-	-
Any other(Specify)	-	-	-	-
Total	-	-	20,72,600	11,67,100

3.7 No. of books published i) With ISBN No. Edited Books

ii) Without ISBN No.

3.8 No. of University Departments receiving funds from

UGC-SAP	<input type="text" value="-"/>	CAS	<input type="text" value="-"/>	DST-FIST	<input type="text" value="-"/>
DPE	<input type="text" value="-"/>			DBT Scheme/funds	<input type="text" value="-"/>

3.9 For colleges Autonomy CPE DBT scheme

INSPIRE CE other (specify)

3.10 Revenue generated through consultancy

3.11 No. of conferences

organized by the Institution

Level	International	National	State	University	College
Number	0	0	1	2	1
Sponsoring agencies					

3.12 No. of faculty served as experts, chairpersons or resource persons

3.13 No. of collaborations International

And

3.14 No. of linkages created during this year

3.15 Total budget for research for current year in lakhs :

From funding agency From of University/College

Total 3.0

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	-
	Granted	-
International	Applied	-
	Granted	-
Commercialised	Applied	-
	Granted	-

3.17 No. of research awards/ recognitions received by faculty and research fellows Of the institute in the year

Total	International	National	State	University	Dist	College
-	-	02	-	-	-	-

3.18 No. of faculty from the Institution who are Ph.D. Guides and students registered under them

10

18

3.19 No. of Ph.D. awarded by faculty from the Institution

6

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF 01 JRF 0 Project Fellows 1 Any other 0

3.21 No. of students Participated in NSS events:

University level 140 0
 National level International level 0 0

3.22 No. of students participated in NCC events:

University level 1700 10
 National level International level 0 0

3.23 No. of Awards won in NSS:

	University level	<input type="text" value="0"/>	State level	<input type="text" value="0"/>
National level	International level	<input type="text" value="0"/>		<input type="text" value="0"/>

3.24 No. of Awards won in NCC:

	University level	<input type="text" value="0"/>	State level	<input type="text" value="0"/>
National level	International level	<input type="text" value="0"/>		<input type="text" value="0"/>

3.25 No. of Extension activities organized

University forum	College for	<input type="text" value="2"/>	<input type="text" value="3"/>	
NCC	NSS	Any other	<input type="text" value="4"/>	<input type="text" value="2"/>
				<input type="text"/>

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

Celebration of National festivals like Independence Day, Republic Day, Academic and industrial tour.

Provided motivation to students to participate in various competitions, seminar, workshop and all the college activities.

NCC and NSS unit were strengthened.

Experts lecture for personality development, communication skills, instrument training programmes were arranged.

Social Responsibility of Institution

To serve the society, institute arranged following programs.

Blood donation camp, AIDS Awareness programme.

Participation in rallies for social problem like Tree plantation, save water and Global warming awareness.

Literacy campaign & pulse polio immunization programme, water awareness program.

Participation in all social reform programs organized by different Go's and NGO'S in Patan Area.

Criterion – IV

4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing Sq.foot	Newly created Sq.foot	Source of Fund	Total Sq.foot
Campus area	34.7acer			34.7acer
Class rooms (20)	18709.17		Management	18709.17
Laboratories	13984	5670+2500 =8170	UGC + Management	19654+2500 =22154
Seminar Halls	0	2500	UGC + Management	2500
No. of important equipments purchased (\geq 1-0 lakh) during the current year.	5		UGC+ Management	
Value of the equipment purchased during the year (Rs. in Lakhs)				
Library	2000	-		2000
administrative block + staff	1067		Management	1067
principal office	627		Management	627
iqac room	110		Management	110
staff room	1190		Management	1190
research lab	300	615	UGC + Management	915

4.2 Computerization of administration and library

- The Administrative office and library is fully computerized.
- On-line access and internet facilities are available in the library during working hour.
- Bar Coding of library collection is under process.
- Office administration has been computerized with Wi-Fi connectivity.
- Account department uses tally package for account purpose.
- Admission Process and Internal assessment were partially computerized.

4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	3340		180		3520	
Reference Books	1200		40		1240	
e-Books	10		12		22	
Journals	13				13	
e-Journals	15		10		25	
Digital Database	N-list				N-list	
CD & Video	400				400	
Others (specify)	6832				6832	

4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Others
Existing	125	1	√	√	√	√	√	
Added	25	1						
Total	150	2						

4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

- Under faculty development program, one day workshop and orientation program on computer literacy internet access has been conducted for the staff to upgrade their ICT knowledge.
- 2-day MATLAB training program for teacher and students of this Institute was organized.
- 2 Programmes for girls
- 1 Program for SC ST students

4.6 Amount spent on maintenance in lakhs :

i) ICT

1.9

ii) Campus Infrastructure and facilities

3.9

iii) Equipments

22.8

iv) Others

1.5

Total :

30.1

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

- IQAC has prepared admission booklet form of college prospectus which gives information about (following/various) student support services available to them in college campus.
- S.T. Bus and Railway Bus concession.
- First aid Medical, ATM center.
- Xerox & stationary center.
- IQAC provides information about various scholarship/free-ship offered by Government and academic loan by nationalized bank For SC- ST, OBC and economically weaker students.
- IQAC also encourages (and provides information about various subjective exams like KVPY, IAPT, SOMLALIT, MINAXI, GARDICHAIR exams.
- Internet facility is available to students in library and DEL lab.
- Carrier guidance and placement cell organises various carrier placement activities.
- Book exhibition is held in library once in year-KNOW YOUR LIBRARY.

5.2 Efforts made by the institution for tracking the progression

- The tracking of student progression is based on data collected by departments about student's performance in attendance during theory and practical work, Participation in extracurricular activities and performance in internal exam.
- On the basis of the analysis of data, proper suggestions are given to students and their parents during parent-teacher meeting.
- Average students were identified and remedial classes were arranged for them to improve their results.
- The tracking of institutional progress is based on getting regular feedback from all stakeholders.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
1430	65	18	0

(b) No. of students outside the state

0

(c) No. of international students

0

Men Women

No	%

No	%

529 Total 576 Total 576
 General SC ST OBC 2012 Physically Challenged
 General SC ST OBC 2012 Physically Challenged

Demand ratio 1:8 Dropout 10%

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

- Carrier guidance and placement cell provided coaching for various competitive examinations with the help of expert resources persons from and outside the college.

No. of students beneficiaries 315

5.5 No. of students qualified in these examinations

NET 0 ULET GATE 0 T 0 0
 IAS/IPS etc 0 State PSC 0 C Others 0 0

5.6 Details of student counselling and career guidance

- At the time of Admission.
- Time of Examination.
- Career opportunities in respective subject.
- Girls students were counseled by Women Empower Cell.
- Students were counseled for their personal problem, grievances and motivation for better performance.

No. of students benefitted All students

5.7 Details of campus placement

	<i>On campus</i>	<i>Off Campus</i>	
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
5	384	58	N/A

5.8 Details of gender sensitization programmes

- WEC conducted various awareness programs about gender equity, gender integration, female health related awareness problem, women harassment, legal help for ladies orientation program for girl student.

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level National level International level

No. of students participated in cultural events

State/ University level National level International level

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports : State/ University level National level International level

Cultural: State/ University level National level International level

5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution	-----	-----
Financial support from government	824	49,71,210
Financial support from other sources	-----	----
Number of students who received International/ National recognitions	--	----

5.11 Student organised / initiatives

Fairs : State/ University level	<input type="text" value="0"/>	National level	<input type="text" value="0"/>	International level	<input type="text" value="0"/>
Exhibition: State/ University level	<input type="text" value="0"/>	National level	<input type="text" value="0"/>	International level	<input type="text" value="0"/>

5.12 No. of social initiatives undertaken by the students

5.13 Major grievances of students (if any) redressed: Nil

Criterion – VI

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

Vision

The vision is to see the youth approaching life scientifically, behaving morally and discharging duties responsibly towards the making of the state and the nation.

Mission

Since the inception of the college, we have been working with mission of improving this region educationally, culturally and socially. We are the progeny of great scholars like Hemchandracharya and such others. Our mission is to prove it literally right.

We want to shape and mould the dreams, talents and energies of the young minds of the area with the knowledge of modern science and technologies. So that they may play vital role not only in the lifting of their family or area but the whole state and the nation as well with their mature and positive growth of intelligence, personality and attitude.

We want to create more career options by providing them the best educational and moral guidance. The mission is to turn their all the latent and inherent capabilities into hyper active and useful state. Since this is the age of science, we want to instil scientific thinking, and grow scientific and rational attitude in the youth. So, the purpose is to make this area and its youth as much useful and meaningful to the state and nation as possible.

6.2 Does the Institution has a management Information System

Yes

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

The college is not having the autonomous status; it follows the syllabus framed by Hemchandracharya North Gujarat University. Normally University updates the syllabus of each subject once in every three years.

Many of our faculty members are serving as a member of the Board of Studies of our University. IQAC delivers suggestions to these faculties based on informal feedbacks and suggestions received from various stakeholders for curriculum Development for course set-up and teaching methodology.

They give their suggestions and recommendations in updating the curriculum as per the feedback given by the stakeholders.

6.3.2 Teaching and Learning

The college has modern information and communication technology to enrich the teaching and learning experiences of the beneficiaries. The college has an adequate number of computer systems.

College follows various methods for teaching and learning. Each core subject combination is supplemented amply by co-curricular and extra-curricular program. Learning with earning encourages the students to plan, probe, verify and experiment on a wide spectrum of issues, dialogue, discussion and debate.

The CBCS System is quite challenging. The students were provided proper guidance through counselling to meet the challenges.

The following structure was adopted to obtain better output of teaching and learning.

- Regular classes as well as additional expert lectures
- Remedial classes for weak learners
- Motivation for rank holders
- ICT enabled training and provision for ICT tools
- Continuous Internal assessment programmes □
- Assignments and project work
- Seminars, Presentations
- Quality improvement program
- Faculty development program
- Theory, projects, assignments & practical for effective learning.

6.3.3 Examination and Evaluation

To monitor examination and evaluation work, College has formed Examination committee. The committee arranges examination schedule for both theory and practical. It also communicates all the necessary information regarding internal and external examinations to faculty and student.

6.3.4 Research and Development

Research and Development cell is an integral part of the activities of Sheth M.N.Science College.

The UGC has recognized our college as “College with Potential for Excellence” and provided a special grant of Rs 1,00,00,000/- major part of this amount is spent for developing research facilities in the college. The college conducts research investigations within its academic programmes.

This cell regulates all the academic, sponsored, collaborative research projects and consultancy works in the college. The objective of the Research Cell varies from the advancement of theoretical knowledge to development of new technology to solve practical problems. The current research projects have also acted as the training ground for the young UG-PG students of this college.

6.3.5 Library, ICT and physical infrastructure / instrumentation

Physical Infrastructure

AQAR 2013-14 §

Institute has golden jubilee seminar Halls equipped with internet and projector with seating capacity of 150~200 members, Faculty rooms, HoD’s chambers, Meeting rooms, Office, Class rooms, Tutorial rooms, Girls common room, DEL LAB, Research Laboratory, Library, Internet and Wi-Fi facility is available in the entire building.

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6.3.6 Human Resource Management

In order to revitalize the human resources internal evaluation of faculty and office was carried out. Separate meetings were organized for teaching and non-teaching staff. They were given required suggestion for better work output and transparency by upgrading their knowledge and skill.

6.3.7 Faculty and Staff recruitment

- As per the Government & UGC norms faculty and staff recruitment takes place.
- When the State Govt. delays the NOC process for old/new vacancies as per the work- load, the College Trust, as per Govt. academic qualification recruitment process norms, appoints the Faculty as well as Staff not to let the college work suffer for the benefit of the students.

6.3.8 Industry Interaction / Collaboration

The industry Interaction cell (IIC) at Sheth M.N. Science College is intended to be the face of the institute to the industry. It aims to facilities the process of close industry-institute interaction and actively promoting fresh avenues for the same. Industry interaction cell (IIC) strives to enhance industry interaction with students and bridge the gap between academic and corporate world. Some faculty members of college are in touch with people of industry

6.3.9 Admission of Students

Our college follows the schedule decided by the University of HNGU, Patan which is announced in major newspapers and news channels, and the university website. The college also give publicity to the admission process through the college website, prospectus and notice boards. **The dates and course details for admission were announced in newspaper.**

An admission committee is formed comprising of faculty and office staff under the chairmanship of the Principal for the process of admission. The process of admission is monitored by admission committee. Transparency is maintained regarding admission to all the candidates of all categories.

For UG admission the college follows all the rules and regulation of Hemchandracharya North Gujarat University and the guideline of Reservation policy prescribed by government.

Admission of PG course is given by central admission committee of university.

6.4Welfare schemes for

Teaching	<ul style="list-style-type: none"> • Group Insurance • Travel Loan for International Conference abroad • Study Leave • Maternal Leave women staff
Non teaching	<ul style="list-style-type: none"> • Group Insurance • Free uniform, medical insurance • loan facility • EPF benefits
Students	<ul style="list-style-type: none"> • Merit & Mean Scholarships & Free ships from Govt. • Group accident policy of Rs.100000/-to all students offered by Gujarat govt. • Coaching for Competitive Exams • Medical Insurance & primary Medical Centre at the Campus premises • Skill based Career Oriented Programs • Entrepreneurship Development Programmes • NSS / NCC activities • Saptadhara • Placement and vocational guidance facility • Internet facility • UDISHA & BISAG online Expert Lectures etc. • Soft skill training programme.

6.5 Total corpus fund generated

00

6.6 Whether annual financial audit has been done Yes

No

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	√	NAAC, KCG	√	Management of NGES
Administrative	√	NAAC, KCG	√	Management of NGES

6.8 Does the University/ Autonomous College declare results within 30 days?

For UG Programmes Yes No

For PG Programmes Yes No

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

NA

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

NA

6.11 Activities and support from the Alumni Association

The college interacts with the members of alumni association formally and informally throughout the academic year. Alumni members in the banks, government departments, education fields and other sectors provide valuable information about various competitive exams like -UPSC, GPSC, BANK, LIC etc. They also keep the students abreast of emerging trends in professional courses and in industry.

6.12 Activities and support from the Parent – Teacher Association

Parent's role is of primary importance in moulding the future of their wards.

The parents are invited to the college every year. The faculty members give information regarding various curricular ,co-curricular activities and welfare scheme for the students. The college also accepts and implements constructive suggestions offered by Parents for the betterment of quality of teaching and learning.

6.13 Development programmes for support staff

- The support staff members were given soft skill training, especially of Computer Operative Skills to make the administration smooth, effective, accurate and time-saving for the students and the institute as well.
- One day workshop on leadership and motivation was organized to create an

6.14 Initiatives taken by the institution to make the campus eco-friendly

Initiatives taken by the college to make the campus eco-friendly

- **Energy conservation** – Strict measures in using the electricity and encouraging saving the current attitudes among staff and students.
- **Water harvesting**–Installed in various places inside the campus and developed water tank in the botanical garden. Rain water is stored in bulk and it is utilized as raw material for the deionization plant at the Chemistry Department.
- **Plantation**–For making green campus, Staff and students have planted trees in the campus and in the botanical garden. Moreover, NSS and NCC units provide their extension services in the campus and outside of the campus for tree plantation.
- **Hazardous waste management** – Effective housekeeping system is practiced where hazardous waste management is effectively taken care. The campus is more eco-conscious and it is declared as free plastic zone. Chemical waste is destroyed by appropriate treatment and paper waste is discarded by fire.
- **E-waste management** –
Strict procedures are followed where the e-waste management is taken care by the management and housekeeping systems.

Criterion – VII

7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the Functioning of the institution. Give details.

- AIDS awareness programme continues.
- Re-designed website.
- Work on modern sports facilities is in progress.
- Launched new skill development programmes.
- Green, plastic free campus.
- Solid waste management system.

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

- Started a primary health care centre in order to provide first aid and other medical support to the students and staff.
- Strengthened the college library with 1624 more books.
- Applied for UG course in botany and zoology.
- Applied for UGC funded research projects.
- AIDS awareness programs were conducted.
- Completed the work of golden jubilee hall, research lab for chemistry, new laboratory of physics.

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

Soil health card

An Ever Changing Museum of Living Plants

****Provide the details in annexure (annexure need to be numbered as i, ii,iii)***

7.4 Contribution to environmental awareness / protection

Energy conservation

In our institution, we are using CFL at few places like seminar hall, auditorium, and computer laboratory for and power saver tube lights at other places which conserves energy.

- **E-waste management –**

Strict procedures are followed where the e-waste management is taken care by the management and housekeeping systems.

- **Plantation**–For making green campus, Staff and students have planted trees in the campus and in the botanical garden. Moreover, NSS and NCC units provide their extension services in the campus and outside of the campus for tree plantation.

- **Hazardous waste management –** Effective housekeeping system is practiced where hazardous waste management is effectively taken care. The campus is more eco-conscious and it is declared as free plastic zone. Chemical waste is destroyed by appropriate treatment and paper waste is discarded by fire.

7.5 Whether environmental audit was conducted? Yes No

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis)

Sheth M.N.Science College, Patan is a premier education institute of the Gujarat, affiliated to Hemchandrachaya North Gujarat University, Patan. College is re-accredited 'B⁺⁺' grade by NAAC. College is awarded with potential for excellence by UGC first in 2007.

Institute offers 4 UG, 1 PG, and 2 Ph.D. programmes. College also offers 4 certificate courses to inculcate skills for the current needs of industries.

College is going to establish strong Institute- Industry linkages. College is having advanced research laboratory with sophisticated equipments like HPLC, GC, FTIR, UV visible spectrophotometer.

Apart from this, advance plant tissue culture laboratory have been developed for research in the area of tissue culture.

College is having well developed Botanical garden.

8.Plans of institution for next year

To organize state level seminar.

To encourage UG student for minor research project.

To organize remedial classes for improvement of results.

To increase carrier placement programme.

To organize more training programmes on sophisticated instruments.

Target minimum 10 top position in top 50 position of HNGU final examinations in each semester.

To organize more activities for Sports, NCC and NSS.

Regular display of BISAG programme.

To allot official e-mail ID to all faculty.

To apply for PG centre in Physics, Botany and Analytical Chemistry.

To apply for CPE status.

To apply for more minor and major research projects.

Name A.N. SWAMI Name Dr. K.S.PARIKH

Signature of the Coordinator, IQAC Signature of the Chairperson, IQAC

BEST PRACTICES OF THE COLLEGE:

Soil Analysis/Instrumentation Training Programme/Workshop on Practical in Chemistry

The context that required the initiation of the practice:

Under this practice three activities are clubbed: Soil testing and soil health card, workshop for sophisticated instruments (like FT IR, HPLC) and Workshop on practical in chemistry.

India is upcoming as a developed country all around the globe. Technical up gradation and development are complementary. We are passing through a transition phase where modern technology and traditional technology are both living together. Being an agricultural country, it is a key requirement of a certain level of information of soil to provide better crops. This can be done by soil analysis, which provides the information about soil health as well as solution to improve its fertility. As a part of “Swarnim Gujarat” celebration, Gujarat government had asked science colleges to provide their cooperation for soil testing as the agriculture laboratories of the state are not in a position to complete the task in the prescribed time frame. Though, this is an extra work for college other than regular teaching learning practice, our college has played a role of responsibility component of the society and accepted this task for the betterment of farmers. Since last three consecutive years, we are doing this very efficiently with the help of students and non-teaching staff.

Now a day, technology has emerged as a powerful tool for development. So to meet the need of industry and to satisfy the thirst of research fields, we have organised nearly twenty one training workshops on HPLC and FT-IR for the faculty members from HNG University as well as other universities of the state. The students of UG and PG Department of different colleges of the state, research scholars and research mentors from HNG University and students of the pharmaceutical department of HNG University were also trained in groups. This may open a new pathway for the students to enter into the field of higher education and research. It also helps them to get better job opportunities in the pharmaceutical and chemical industries.

At present survey reports of government indicates that the interest towards higher study in science and technology is noticeably declining. Today’s youth are going away

from scientific attitude. So to develop scientific aptitude among the secondary school students, workshops were organized on 16th and 17th December, 2011.

These programs were arranged as a part of the celebration of the International Year of Chemistry (IYC-2011) to contribute the role of chemistry for betterment of humankind.

Objectives of the practice:

- To inculcate the scientific aptitude for agricultural chemistry, soil chemistry and interest towards experimental work.
- To meet the need of government task by providing our expertise.
- To enrich college laboratories through such consultancy programs.
- To generate practical knowledge among the students and staff about the soil science and economic gains.
- To encourage the research activities.
- To provide a platform to students for a better future in the field of higher study and for better job opportunities in the industry.
- To be an active partner for society welfare.

The Practice:

As a part of Swarnim Gujarat celebrations, the state government has made soil analysis and soil health card program and the task is given to the science colleges of the state. The agriculture department of the government of Gujarat collects the soil samples from farms of different regions of our state for screening and testing purpose. Then, the soil samples are sent to the various colleges for actual analysis and finding of soil health conditions by using certain instruments like pH meter, conductivity meter, colorimeter, flame photometer etc. for electro chemical and chemical analysis. We try to determine the presence and amount of elements e.g. C, N, Na, K and P in the samples. Various parameters like conductivity, pH, and optical density are studied. The results obtained are given in the form of a soil health card, which help to know the nature, quality and fertility of soil. This helps the farmers for better agricultural practice.

Training programs on sophisticated Instruments viz. HPLC and FT-IR are organized to make students understand these instruments properly so that they can execute their knowledge in the industries. The students are selected in few numbers and are individually trained with the theoretical and the practical aspects of the instruments.

The students are made to learn each and every small concern about the instrument. Later the students are allowed to carry out experiments on the instruments by their own.

An exclusive kind of scientific workshop on 16-17 December 2011 was organized by the chemistry department as a part of celebration of the international year of chemistry – 2011, for improvising the basics of the students of the schools in the vicinity of the college. Very basic experiments were performed by the experts from Science City, Bhavnagar to inspire the students to adopt science as their future career. Ninety students along with their teachers from around eighteen schools of Patan city were benefiting from this workshop.

Obstacles faced if any and strategies adopted to overcome them:

Soil analysis is different task than our regular teaching learning. So the instrumentation and methodology applied for such work is totally new and challenging for us. For calibration of instruments and establish prescribed methods to check the parameters provided as per standard methods is difficult and challenging.

By providing extra time and passion we succeeded to solve the challenge.

Impact of the practice:

- Farmers are informed about the nature, quality and fertility of soil through the soil health card which helps them to make appropriate improvisation in various agrochemical methods.
- Farmers can understand the chemical nature of their soil which helps them to get better crops.
- It helps farmers economically too.
- Students get certain knowledge which will help them in performing in companies.
- Students earn some money too.
- It increases research work of college.
- By using soil analysis teaching, farmers can get all information regarding their farms speedily.

Resources required:

Laboratory equipments, various chemicals, manpower etc.

About the Institution:

Sheth M. N. Science College and Shri and Shrimati P.K. Kotawala Arts College were started in 1959. It is managed by North Gujarat Education Society, Mumbai. In 1991, Sheth M. N. Science College was bifurcated from Arts College.

Our college has excellent infrastructure and congenial environment, which provides students one of the best platforms to exhibit their potentiality in the field of higher education. In the competitive environment for higher education, the institute has maintained its reputation firmly. The institute boasts of big classrooms, well-equipped laboratories, prosperous library, huge sports campus, well designed and maintained botanical garden, bio-diversity, and highly qualified & well experienced faculty members. NAAC accredited B++ grade to our college and also UGC awarded the college with “Potential for Excellence (CPE).

- **Name of the Institution** :Sheth M. N. Science College, Patan
- **Year of Accreditation** :2007
- **Address** :Sheth M. N. Science College, Patan
Rajmahel Road, Patan-384 265.
(Gujarat - India)
- **Grade awarded by NAAC** :B++
- **Email** :mnsc@nges-patan.org
- **Contact person for further Details** :Dr. K. S. Parikh, Principal
- **Web site** :www.mnsc.nges-patan.org

❖ **Title of the practice:**

An Ever Changing Museum of Living Plants

• **The context that required the initiation of the practice:**

The “garden is an ever changing museum of living plants”. A Botanical garden is much more significant than a beautifully landscaped garden. It is a documented collection of plants which provides a resource base for research, education and recreation. Growing and exhibiting plants are also a major task of the garden.

Biodiversity conservation is the major problem of the day. We are trying to establish and to preserve some natural habitat for plants, birds and animals and try to protect them and provided safe habitat.

Objectives of the practice:

- To serve as a living repository of plants of a country and also of selected exotic species.
- To serve as a "safe abode" for the rare and endemic plants.

- To house the seed collection of selected economic, ornamental and medicinal plants and their wild progenitors.
- To promote educational programmes and research in experimental botany and ornamental horticulture.
- To undertake research in propagation of rare and threatened species and species for afforestation, energy and alternative or substitute food and fodder plants. Species of different climatic condition are to be grown in specialised conservation houses such as phytotrons hot and greenhouse etc.
- To generate awareness about the value of trees and about curious, beautiful and interesting plants with delightful landscaping and display.
- To organise flower, foliage and plant shows, exchange of viable seed materials, seedlings, saplings and other propagules.
- To introduce economic and economically exploitable species to, accommodate and study the physiology of species for field trials and cultivation.
- To act as a data bank for information and documentation on holdings in the Botanical garden of the country or region.
- To intricate relationships that plants have developed with their environment.
- To study of plants in the garden and the herbarium for modern taxonomy and experimental botany.
- To study Phytosociology of plants,
- To develop a glass house for plants of different climates.
- To make avail research facilities for utilizing the living collections (Herbarium and e herbarium).
- To grow a centre for excellence to study different vegetation types.
- To cover the major part of curriculum related topics with the help of live demonstration and study of plants.
- To provide student education in live museum.

❖ **The Practice:**

Botanical garden can be defined as " which maintain collections of live plants mainly for study, scientific research, conservation and education".

Botanical garden usually label their plants. Such passport data tells us information about plants on local name, scientific name, family, special features, uses and parts used etc. Sometimes the labels may give us more information about when and where the plant is collected, its habitat, range of distribution etc. In the available literature, the garden is described as an outdoor living museum.

The total area of a botanical garden is about 4046.86 square meters. Patan district lies between 23° 41' and 23° 55' N latitude and 71° 31' and 72° 20' E longitude. The region is having the minimum temperature as low as 5°C -10°C and maximum temperature as high as 40°C – 48°C. The average rainfall in the region is about 701 mm.

The botanical garden is a special place for plants and the collections are managed in a scientific way. It gives scientific information about various types of plants. Rare and endangered plants are well cared and studied in Botanical garden. It is the centre of expertise in horticulture and training. Scientific research about plants is another major activity and thus act as a resource and information centre. In short Botanical garden is special target and focused places for plants.

In relations to religious special cultivated sacred plants and for these purposes we designed landscaping for Nakshatra Van and Rashi Van. This reflects the cultural and traditional heritage of India.

Living museum is taken as the centre of conservation of plant resources from their extinction.

The importance and usefulness of Botanical garden has been realized by all the developed countries of the world.

Garden Division:

- (i) Ornamental Plants**
- (ii) Aquatic Plants**
- (iii) Rock Garden**
- (iv) Medicinal Plants**
- (v) Bamboosetum**
- (vi) Arboretum**
- (vii) Ferns and Fern Allies**
- (viii) Palms**
- (ix) Fruit Plants**
- (x) Gene Bank**

Another important feature of the Garden is a National Gene Bank for medicinal and aromatic plants. The aim of this gene bank is to conserve medicinal and aromatic plants

(xi) Seed Bank

Seeds of over 100 indigenous species are preserved here. It exchanges seeds with more than 10 Botanical Gardens around.

(xii) Museum

As a support unit, the garden has a Botanical museum, which can be used by visitors, students, researchers and botanists for deep and detailed understanding of Botanical systems. Plant products like seeds, roots, etc., are also displayed.

This museum gives an awareness of man's dependence on useful plants. The economic importance of plants is emphasized and the collections provide examples of the many ways in which mankind has used plants for sustenance. The involvement in the scientific study of plants not only has enlarged the collection of living plants in the garden but also has resulted in the accumulation of exceptionally rich archives in the museum. Exhibits in the museum are valuable supplements to the display and labelling of growing plants. This Botanical museum is a valuable aid especially for teachers, researchers and students.

(xiii) Herbarium

Herbarium contains over 500 specimens of flowering plants.

(xiii) The Research and Development System

- The department of Botany is working at recognized research centres by HNGU, JJTU and Pacific Universities. Moreover, the faculty members and staff are actively engaged in research.
- Research publications are presented internationally through open access print and e journal "Life Sciences Leaflets" (ISSN 0976 - 1098 (On Line) & ISSN 2277 - 4297 (Print)) and Indexing (Index Copernicus 5.09 and NAAS rating 1.3), which is edited by Dr. N. K. Patel as editor in chief.
- Lab facilities and plant identification for research are also provided.

❖ **Obstacles faced if any and strategies adopted to overcome them:**

i. Water for irrigation

Built up the water tank and established overhead tank.

ii. Gardner – permanent

Ad-hoc Gardner provided by the institute.

iii. Seasonal effects

Built up the greenhouse and water tank for aquatic plants.

iv. Manure

Developed Vermicomposting plant.

v. Budget:

A special budget is allocated for development and sustain of the living museum.

❖ **Impact of the practice:**

Resources and facilities for environmental education are noticeably increased.

Considering the sheer diversity of plants in a Botanical garden - native, common, rare, endangered, endemic and exotic plants, the scope for education is endless. Thus living museum is emerging as a scientific centre to teach people about,

- use of plants economically, culturally and aesthetically.
- Threat to plants.
- Need to conserve the plants.

Education Materials:

- Garden or live museum can also be used as educational materials e.g. herbarium and fresh plant materials.
- As a fruit of such facilities a research paper entitled “Study of biodiversity in the botanical garden of Sheth M. N. science College, Patan ” is published in “Plant Archives” (Vol.9(2):537-542,2009(ISBN 0972-5210)).
- 140(66%) plant species, 53 (25%) bird species, 12(6%) reptiles, 7(3%) mammals and 1 amphibian are recorded.
- Living Museum is providing very good habitat for all living organisms and preserve valuable biodiversity.
- Living museum is coming out a source of information for all educational institutes to become aware about global warming and its probable remedy.

❖ **Developing Programmes :**

Living collections serve as a support in the development of the educational programmes. The collections and the expertise of the staff are ideal in enabling to

conduct a variety of activities that aim to make the public, aware of the importance of protecting our plant heritage.

With appropriate labels, displays and other interpretive information materials, the Botanical garden can sensitise and motivate people to protect biodiversity and instil a sense of care and concern over the protection of the environment.

Botanical garden has developed following comprehensive environmental education programmes through which more popular public education component can be actively pursued.

- Field excursions
- Demonstration of collections
- Practical horticulture and arboriculture
- Botany courses
- Quiz programmes and essay competitions
- Interpretive signs and posters
- Outreach programmes
- Preparing education packs
- Teaching teachers
- Know the medicinal plants and their therapeutic values
- Know the aquatic plants and their use and adaptations
- Know the rare plants and their extinction
- Know the common trees in the arboretum
- Training in horticulture
- A Workshop on wild edibles
- A Study of plants across the curriculum

❖ **Conclusion**

Living Museum can be considered as a Learning Resource Centre with live examples. It is an Exploratory centre to facilitate the free flow of qualitative and quantitative information on economic and medicinal plants. Moreover it is a Learning laboratory that provides a framework for training in horticulture, tissue culture, etc. Thus Living Museum can be considered as the Second biggest classroom in nature. Success depends on the unique combination of facilities, opportunities, expertise and the link with other gardens. Moreover modern botanic garden has a role in society with new and extremely important elements in it.

These include the "ex situ" maintenance of rare and endangered species, "in vitro" cultivation, field gene banks research on reproductive biology etc. Thus education is a major part of the garden' programme and ranges from classes of young children to the researchers.

❖ **Resources required:**

Plants, Gardeners, Security, Water, Manure, Students etc.

❖ **About the Institution:**

Sheth M. N. Science College and Shri and Shrimati P.K. Kotawala Arts College was started in 1959. It is managed by North Gujarat Education Society, Mumbai. In 1991, Sheth M. N. Science College was bifurcated from Arts College.

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ii. Year of Accreditation	: 2007
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iv. NAAC Accreditation Grade	:B++
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