CHAPTER – 3
PURE SCIENCE DEPARTMENTS: BRIEF PROFILE

This chapter consists of the history of the department under study in Pure Sciences, North Maharashtra University, Course available, and faculties who are working in department.

3.1 North Maharashtra University, Jalgaon

3.1.1 Introduction

The North Maharashtra University, Jalgaon, established on 15th August, 1990 under the Maharashtra Universities Act, XXIX of 1989, started its academic and administrative functioning from the academic year 1991-92. Within the span of 3 years, the University is recognized under section 2 (f) in 1991 and 12 (B) in 1994 under the University Grants Commission (UGC) Act, 1956. The jurisdiction of the University is extended over three districts i.e. Jalgaon, Dhule and Nandurbar, a predominantly tribal and rural area of Khandesh region. The University has opened its doors of higher education to mostly ‘first generation learners’ of this area. Access, equity and academic excellence are the thrust areas of the University’s educational endeavor.

A climate of research, teaching, learning, student development, value education and community outreach programmes is nurtured through vital links between the University Schools/Institute and all affiliated colleges. There are eight faculties namely, Arts and Fine Arts, Commerce and Management, Science, Engineering and Technology, Pharmacy, Law, Education and Mental, Moral and Social Sciences covering various UG/PG/M.Phil./Ph.D. programmes on the University Campus as well as in the affiliated colleges. The University has successfully adopted the ‘School Concept’ with academic flexibility for the optimal use of infrastructure and resources. There are 13 Schools and 01 Institute imparting education in 11-UG, 62-PG and 37-Ph.D. Programmes (North Maharashtra University, 2015a).
The following table shows the schools in North Maharashtra University, Jalgaon

**Table No. 3.1.1: Schools in North Maharashtra University, Jalgaon**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the School</th>
<th>Year of Establishment</th>
<th>Subjects covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>School of Environmental and Earth Studies</td>
<td>1st July, 1999</td>
<td>Environmental Science, Applied Geography, Applied Geology and Environmental Engineering and Technology</td>
</tr>
<tr>
<td>2.</td>
<td>School of Life Sciences</td>
<td>1999</td>
<td>Microbiology, Biochemistry and Biotechnology</td>
</tr>
<tr>
<td>5.</td>
<td>School of Computer Sciences</td>
<td>August 1994</td>
<td>Computer Applications, Computer Science and Information Technology</td>
</tr>
<tr>
<td>6.</td>
<td>School of Mathematical Sciences</td>
<td>-</td>
<td>Mathematics, Statistics and Actuarial Science</td>
</tr>
<tr>
<td>7.</td>
<td>University Institute of Chemical Technology</td>
<td>1994</td>
<td>Plastic Technology, Paint Technology, Oil Technology, Food Technology and Chemical Engineering</td>
</tr>
<tr>
<td>8.</td>
<td>School of Languages Studies and Research Centre</td>
<td>1st August 1999</td>
<td>Marathi, Hindi and English</td>
</tr>
<tr>
<td>9.</td>
<td>School of Education</td>
<td>2006</td>
<td>Education</td>
</tr>
<tr>
<td>10.</td>
<td>School of Management Studies</td>
<td>1992</td>
<td>MBA and BBM</td>
</tr>
<tr>
<td>11.</td>
<td>School of Social Sciences</td>
<td>-</td>
<td>Chatrapati Shivaji Maharaj Chair and Research Center</td>
</tr>
<tr>
<td>12.</td>
<td>School of Arts and Humanities</td>
<td>2010-2011</td>
<td>Library and Information Science, Mass Communication and Journalism, Arts &amp; Fine Arts, Defence and Strategic Studies</td>
</tr>
<tr>
<td>13.</td>
<td>School of Thoughts</td>
<td>2012-2013</td>
<td>Buddhist Study and Research Centre, Chatrapati Shivaji Maharaj Study and Research Centre, Mahatma Phule Study and Research Centre, Swami Vivekanand Study and Research Centre, Mahatma Gandhi Study and Research Centre, Sane Guruji Sanskar Kendra</td>
</tr>
</tbody>
</table>
3.2 Pure Science Departments

3.2.1 Introduction

The subjects undertaken for the study can be categorized as follows:

Table No. 3.2.1: Pure Science departments in North Maharashtra University, Jalgaon

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Subjects</th>
<th>School</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Environment Sciences School of Environmental and Earth Sciences</td>
<td>Available in University</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Microbiology, Biochemistry, Biotechnology School of Life Sciences</td>
<td>Available in University</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Chemistry School of Chemical Sciences</td>
<td>Available in University</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Physics &amp; Electronics School of Physical Science</td>
<td>Available in University</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Computer Science School of Computer Sciences</td>
<td>Available in University</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Botany and Zoology ----</td>
<td>Not Available in University</td>
<td></td>
</tr>
</tbody>
</table>

3.3 School of Environmental and Earth Sciences

The School of Environmental and Earth Sciences has established on 1st July 1999. The School has a building with 7500 sq. m. built up area and vast open space. In shorts span of 14 years, the School has established excellent laboratories and library facilities to get quality education in the field of environment and earth sciences. Prof. S. T. Ingle is Director of the School. School is having four teaching departments viz. Department of Environmental Sciences, Department of Applied Geology, Department of Applied Geography and Department of Environmental Engineering and Technology. School offers four Post Graduate courses in Environmental Science, Applied Geology, Applied Geography and M. Tech in Environmental Science and Technology. In addition to this, school has started Certificate course in Industrial Safety and management under career oriented
certificate courses of UGC from academic year 2013 – 14. Eco-friendly sustainable approach in the process of development is a unique culture developed at the School.

The School has received research project grants from various agencies like DST, UGC, MoEF, UNICEF, DRDO, MoWR and state government agencies. The School is covered under the special Assistance Programme (UGC-SAP-DRS, Phase I) of UGC, New Delhi for financial Assistance of 5 years (2009-2012). The School is also covered under DST-FIST programme - Level – I (2012-2017) for financial support (North Maharashtra University, 2015b).

3.4 School of Life Sciences

Established in 1991, the School encompasses three departments viz. Dept. of Microbiology, Biochemistry and Biotechnology under one umbrella for M.Sc. courses. The school is located in the beautiful campus of NMU with an area of 26353.17 sq. ft. and a total laboratory area of 13,500 sq.ft. A large two story phase III construction is also underway recently inaugurated by the renowned scientist- Prof. M. S. Swaminathan The School has 12 faculty members and is equipped with sophisticated Central Instrumentation Facility, which comprises of state-of-art instrumentation for life sciences research.

Other individual and specialized laboratories like Plant Tissue Culture, Cyanobacteria, Probiotics, Siderophore, Biofuel, Fermentation, etc. are also integral part of the School. Digital Library with high-end computers connected parallel to University's VSAT and 2 MBps Internet facilities. The School further has Green House facility, 6 PG laboratories (2 for each department), Two walk-in cold rooms and -20°C and -80°C refrigeration facilities.

The School has successfully completed several research projects amounting more than Rs. 5.29 crores and is currently conducting 8 research projects with a research grant of around Rs. 3.93 crores from various government agencies like, UGC, DBT, DST, RGSTC etc. The School is supported with special grants by UGC (UGC-SAP-DRS) and DST (DST-FIST) programmes.
The School routinely organizes national and international seminars, symposia, workshops, and refresher courses in life sciences and is frequently visited by scientists of national and international eminence. The School is also actively engaged in extension activities for the benefit of the farmers of the Khandesh region in supplying biofertilizers (Plant growth promoters, Trichoderma, Phosphate solublisers, etc.) on no-profit-no-loss basis (North Maharashtra University, 2015c).

3.5 School of Chemical Sciences

The School of Chemical Sciences was established in 1992. The School is recognized under UGC-SAP and DST-FIST since 2004. The School of Chemical Sciences conducts four applied courses, M.Sc. Chemistry with specialization in Polymer Chemistry, Industrial Chemistry, Pesticides & Agrochemicals and Analytical Chemistry and runs one basic course, M.Sc. Physical Chemistry. The School has facility for M. Phil. And Ph.D. programs in all specializations in chemistry. The School has accepted Academic Flexibility and Credit- Grade based Performance and Assessment (CGPA) system from academic year 2009-2010.

All courses offered by the School of Chemical Sciences are based on the knowledge of core and applied chemistry and designed according to the need and demand of current industrial sectors. The prime objective of the school is to produce and train technical and scientific personnel of the highest order of excellence having acumen and scientific attitude in the mind.

Prof. P. P. Mahulikar is the Director of the School and Head of Department of Industrial Chemistry; Prof. D. G. Hundiwale is the Head of Department of Polymer Chemistry (at present Director, BCUD); Prof. Mrs. R. S. Bendre is the Head of Department of Pesticides & Agrochemicals; Prof. Mrs. J. S. Meshram is the Head of Department of Organic Chemistry; Dr. K. K. Sharma is the Incharge of Department of Physical Chemistry and Prof. D. H. More is the Head of Department of Analytical Chemistry (North Maharashtra University, 2015d).

3.6 School of Physical Sciences

The School of Physical Sciences consists of two departments namely, Department of Physics and Department of Electronics. In the academic
year 1991-92 the School started its academic activity in Government Polytechnic, Jalgaon. In the first year of establishment, the School started a post-graduate program in Electronics under the Department of Electronics. In the subsequent year, a post-graduate course in Physics, with two specializations in Material Science and Energy Studies, was introduced under the Department of Physics. After the construction of few buildings on University Campus at Umavi Nagar, the School was initially shifted in the building of School of Chemical Sciences and finally, on October 2, 1997 in its own building.

At present, the School has 13 full time faculty members consisting of 4 Professors, 3 Associate Professors and 6 Assistant Professors. It is due to the dedicated efforts of the active faculty members, valuable guidance of the distinguished personalities, timely support of University authorities and un-quenching curiosity and enthusiasm of students, that the school is progressing to make on National and International arena in its academic pursuits and frontline research. Choice based credit system has been initiated by the School from academic year 2014-2015.

The University Grants Commission (UGC), New Delhi has recognized the research excellence of the School by granting the Departmental Research Support (DRS) – Phase I scheme in 2004 and it was upgraded to DRS – Phase II in 2010. Apart from the UGC support, the School also received major funding from the Department of Science and Technology (DST), New Delhi under the FIST program in 2005. It is also worth mentioning that the faculty members of the School have received considerable individual support through research projects from the National and International funding agencies like Council of Scientific and Industrial Research (CSIR), New Delhi; UGC, New Delhi, All India Council for Technical Education (AICTE), New Delhi; Ministry of Non-conventional Energy Sources (MNES), New Delhi, DST, New Delhi, Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE), Mumbai and Third World Academy of Sciences (TWAS), Italy.

Till date School has received the amount of Rs. 43 Crores & 11.5 Lakhs from various National/International Funding Agencies for the Completed Research
Projects. At Present, School has received amount of Rs. 2 Crores & 26.84 Lakhs for Running Projects.

The Department of Physics has research collaboration with National and International Universities and Institutions like University of Pune, National Chemical Laboratory, Korea Research Institute of Chemical Technology (KRICT), Daejeon, (South Korea), The Society for Advancement of Electrochemical Science and Technology (SAEST), CECRI, Karaikudi, (India), Center for Materials for Electronics Technology, University of South Florida (USA), University of Leipzig, Leipzig, (GERMANY)

The Department of Electronics have research collaboration with National and International Universities and Institutions like SAMEER, IIT Powai (India), University of Tokyo (Japan), Sony Corporation (Japan), Gunma University (Japan), Yokohama National University (Japan), Toyota Technological Institute (Japan), University of California, Riverside (USA), The University of Tokushima (Japan), University of Duisburg (Germany), Firat University (Turkey)

The School has been recognized a technologically advanced center for high quality teaching and research to meet the latest requirements of companies and was granted by UGC to run the M.Tech, (VLSI Technology) course under the Faculty of Engineering in the scheme of Innovative Programs in the year 2005 (North Maharashtra University, 2015e).

3.7 School of Computer Sciences

The Department of Computer Science was established in August 1994. The Department of Computer Science was renamed to School of Computer Sciences in 2011. The School encompasses three departments viz. Dept. of Computer Applications, Dept. of Computer Science, Dept. of Information Technology and UGC Computer Center and runs three courses under this departments M.C.A. and M.Sc. (Computer Science), M.Sc. (Information Technology). It has approx. 24000 Sq. Feet built up area.
In a short span of time school has earned lot of reputation and popularity for providing latest, quality education and fulfilling growing needs for the skilled professionals, of the ever changing Software Industry and the IT world. School consist of well-equipped laboratories for separate computing platforms, enabling the students to work with different cutting edges and hot cake technologies. Enough laboratory time is made available to the students for maximum utilization of the computing facilities. The main strength is highly qualified & experienced faculty members, who are very enthusiastic in learning new technologies and updating their skill sets. Faculty members are always ready to guide students apart from regular teaching hours and maintaining the disciplined behavior in the departments.

Department maintains a very indusive, feel-at-home & open culture in the premise, because they believe in progressive unfoldment of the students towards becoming perfect IT professionals. The department not only provides the IT professionals but apart from regular studies, they cultivate the virtues of discipline, high Moral values, Competitiveness & Team spirit in our students, which leads to the overall personality development of the students (North Maharashtra University, 2015f).

### 3.8 School of Mathematical Sciences

School of Mathematical Sciences includes following three Departments:

- Department of Mathematics
- Department of Statistics
- Department of Actuarial Science

School offers the following applied and job oriented courses/degree programmes:

- M.Sc.(Mathematics) with specialization in Computational Mathematics
- M.Sc.(Statistics) with specialization in Industrial Statistics
- B.Sc.(Actuarial Science)
- M.Phil. and Ph.D. in Mathematics
- M.Phil. and Ph.D. in Statistics
Students are encouraged for projects in the industrial/social/health/financial sectors. School regularly organizes activities for UG and PG students, college teachers and researchers.

Faculty members in the school are actively engaged in research and their research areas include: Algebra, Analysis, Differential Equations, Fluid Dynamic, Fuzzy Mathematics, Industrial Statistics, Reliability, Probability Models, Health Statistics, Actuarial Science, Applied Statistics and Computational Statistics (North Maharashtra University, 2015g).

3.9 Conclusion

This Chapter III described the brief profile of the department of Pure science subjects covered under various Schools in the North Maharashtra University & Data analysis and interpretation are presented in Chapter No. IV.

References


