Annual Quality Assurance Report

Manipal School of Life Sciences
Manipal Academy of Higher Education, Manipal

(2020-21)

MANIPAL SCHOOL OF LIFE SCIENCES
MANIPAL
(A constituent unit of MAHE, Manipal)

Guidelines for the Creation of the

Internal Quality Assurance Cell (IQAC) and Submission of Annual Quality Assurance Report (AQAR) by Accredited Institutions

(For Affiliated/Constituent Colleges)

(Revised as per Revised Accreditation Framework in November, 2017)

राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission
P. O. Box. No. 1075, Opp: NLSIU, Nagarbhavi, **Bengaluru - 560 072** India

NAAC

VISION

To make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives.

MISSION

- ❧ *To arrange for periodic assessment and accreditation of institutions of higher education or units thereof, or specific academic programmes or projects;*
- ❧ *To stimulate the academic environment for promotion of quality of teaching-learning and research in higher education institutions;*
- ❧ *To encourage self-evaluation, accountability, autonomy and innovations in higher education;*
- ❧ *To undertake quality-related research studies, consultancy and training programmes, and*
- ❧ *To collaborate with other stakeholders of higher education for quality evaluation, promotion and sustenance.*

Value Framework

To promote the following core values among the HEIs of the country:

- ➢ *Contributing to National Development*
- ➢ *Fostering Global Competencies among Students*
- ➢ *Inculcating a Value Sysstem among Students*
- ➢ *Promoting the Use of Technology*
- ➢ *Quest for Excellence*

The Annual Quality Assurance Report (AQAR) of the IQAC
(For Affiliated/Constituent Colleges)

Institutions Accredited by NAAC need to submit an Annual self-reviewed progress report i.e. Annual Quality Assurance Report (AQAR) to NAAC, through its IQAC. The report is to detail the tangible results achieved in key areas, specifically identified by the IQAC at the beginning of the Academic year. *The AQAR period would be the Academic Year. (For example, July 1, 2017 to June 30, 2018)*

Note: The terms and abbreviation used in AQAR are in accordance with respective manuals for assessment of NAAC. Please refer institutional manual for glossary and abbreviations terms used in AQAR.

Part – A

Data of the Institution

(data may be captured from IIQA)

1. Name of the Institution   Manipal School of Life Sciences

- Name of the Head of the institution :   Dr K Satyamoorthy
- Designation: Director
- Does the institution function from own campus: Yes
- Phone no./Alternate phone no.:   0820-2922058/2571925
- Mobile no.:   9845718604
- Registered e-mail: ksatyamoorthy@manipal.edu
- Alternate e-mail :   mlsc@manipal.edu

- Address: Planetarium Complex, MAHE
- City/Town: Manipal
- State/UT: Karnataka
- Pin Code: 576104

2. Institutional status:

- Affiliated / Constituent: Constituent
- Type of Institution: Co-education/Men/Women: Co-education
- Location : Rural/Semi-urban/Urban: Rural
- Financial Status: Grants-in aid/ UGC 2f and 12 (B)/ Self financing
  (please specify) –   Self-financing
- Name of the Affiliating University: NA
- Name of the IQAC Co-ordinator :   Dr TG Vasudevan
- Phone no. :   0820-2922058
- Mobile: 9741735917
- IQAC e-mail address: iqac.sols@manipal.edu
- Alternate Email address: mlsc@manipal.edu

3. Website address: www.manipal.edu/msls

Web-link of the AQAR: (Previous Academic Year):

https://manipal.edu/sls-manipal/about-sls/IQAC/aqar-2019-2020.html

4. Whether Academic Calendar prepared during the year?

Yes/No....., if yes, whether it is uploaded in the Institutional website: No

Weblink:

5. Accreditation Details:

Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1st	B+	-	2002	from:2002 to: 2007

2nd	A	3.3	2016	from:2016 to: 2021
3rd				from: to:
4th				from: to:
5th				from: to:

6. Date of Establishment of IQAC: DD/MM/YYYY: 03/06/2013

7. Internal Quality Assurance System

7.1 Quality initiatives by IQAC during the year for promoting quality culture		
Item /Title of the quality initiative by IQAC	Date & duration	Number of participants/beneficiaries
Internal Audit	30.01.2021, 3 hours	2 Auditors, 12 locations
Management Review Meeting	10.08.2020, 1 hour 06.02.2021, 1 hour	10 11

Note: Some Quality Assurance initiatives of the institution are:
   (Indicative list)
- *Regular meeting of Internal Quality Assurance Cell (IQAC); timely submission of Annual Quality Assurance Report (AQAR) to NAAC; Feedback from all stakeholders collected, analysed and used for improvements*
- *Academic Administrative Audit (AAA) conducted and its follow up action*
- *Participation in NIRF*
- *ISO Certification*
- *NBA etc.*
- *Any other Quality Audit*

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8. Provide the list of funds by Central/ State Government-

UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.

Institution/ Department/Faculty	Scheme	Funding agency	Year of award with duration	Amount
Dr K Satyamoorthy	Research	DBT	2020, 3 years	25.75
Dr Manjunath Joshi	Research	DBT	2020, 3 years	45.9
Dr Sanjiban Chakrabarty	Research	SERB	2021, 3 years	33.26
Dr Gireesh G	Research	SERB	2021, 3 years	43.84
Dr Nirmal Mazumder	Research	ICMR	2021, 3 years	43.03
Dr Manjunath Joshi	Research	ICMR	2021, 3 years	19.38
Dr Roopa Nayak	Research	VGST	2021, 1 year	3.0

9. Whether composition of IQAC as per latest NAAC guidelines: Yes/No: Yes
     *upload latest notification of formation of IQAC

10. No. of IQAC meetings held during the year: 2

The minutes of IQAC meeting and compliance to the decisions have been uploaded on the institutional website…Yes/No: No

  (Please upload, minutes of meetings and action taken report)

11. Whether IQAC received funding from any of the funding agency to support its activities during the year?   Yes   No ✓

        If yes, mention the amount: Year:

12. Significant contributions made by IQAC during the current year (maximum five bullets)

 * Start of new MSc program in Genome Engineering

 * Increase in research publications

 * Ensuring conduct of academic activities despite the raging pandemic

 * NABL Accreditation of diagnostic tests in MSLS

 * Participated in NIRF ranking as individual college

13. Plan of action chalked out by the IQAC in the beginning of the Academic year towards Quality Enhancement and the outcome achieved by the end of the Academic year

Plan of Action	Achievements/Outcomes
The objectives for 2020-21 were discussed during the relevant meeting, and the achievement/status of targets for the year were analysed, which were in alignment of the objectives of MAHE, Manipal	The outcomes were predominantly met

14. Whether the AQAR was placed before statutory body?   Yes /No: No

      Name of the Statutory body: Date of meeting(s):

15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning?   **Yes/No:** No   Date:

16. Whether institutional data submitted to AISHE: Yes/No: Yes

        Year: 2020-21   Date of Submission: Feb 2021

17. Does the Institution have Management Information System?
   Yes ✓ No   If yes, give a brief description and a list of modules currently operational. (Maximum 500 words)
MSLS uses management information systems to ensure smooth interaction between students, faculty, staff and management for their activities. Student Information System (SIS), Students Life Cycle Management (SLcM), Employee Service Portal (ESP) are used for these purposes

Part-B

CRITERION I – CURRICULAR ASPECTS
1.1 Curriculum Planning and Implementation
1.1.1 Institution has the mechanism for well planned curriculum delivery and documentation. Explain in 500 words
Yes. Institution has Board of Studies, comprised of eminent individuals, which approves the structure and content of the curricula proposed for the various programs offered. Such contents are usually reviewed and revised as per the feedback from the various stakeholders. Once the approval is provided, academic calendars and class schedules are drawn, approved and circulated. Classes are distributed to all teaching faculty and are held as per schedule. Attendance is marked and is an eligibility criterion for appearing in examinations. Examinations are conducted every session (internal) and at the end of every semester (external). Candidate performance is evaluated, contributing to the grades. Online tools are available to monitor curriculum delivery, attendance, evaluation and assessment of performances. The institution has adopted choice-based credit system for all of its programs to provide curricular flexibility to the students. In addition, the institution is also working towards outcomes-based education mode of curriculum delivery for the next academic year.

1.1.2 Certificate/ Diploma Courses introduced during the Academic year

Name of the Certificate Course	Name of the Diploma Courses	Date of introduction and duration	focus on employability/ entrepreneurship	Skill development
NA	NA	NA	NA	NA

1.2 Academic Flexibility

1.2.1 New programmes/courses introduced during the Academic year

Programme with Code	Date of Introduction	Course with Code	Date of Introduction
MSc Genome Engineering (017L10)	Aug 2020	NA	NA

1.2.2 Programmes in which Choice Based Credit System (CBCS)/Elective course system implemented at the affiliated Colleges (if applicable) during the Academic year.

Name of Programmes adopting CBCS	UG	PG	Date of implementation of CBCS / Elective Course System	UG	PG
BSc Biotechnology	Yes	-	July 2016	Yes	-
MSc Medical Biotechnology	-	Yes	August 2017	-	Yes
MSc Molecular Biology & Human Genetics	-	Yes	August 2017	-	Yes
MSc Bioinformatics	-	Yes	August 2017	-	Yes
MSc by Research in Life Sciences	-	Yes	August 2017	-	Yes
MSc Systems Biology	-	Yes	August 2019	-	Yes
MSc Genome Engineering	-	Yes	August 2020	-	Yes
Already adopted (mention the year): 2016, 2017 & 2019					

1.2.3 Students enrolled in Certificate/ Diploma Courses introduced during the year

	Certificate	Diploma Courses
No of Students	NA	NA

1.3 Curriculum Enrichment

1.3.1 Value-added courses imparting transferable and life skills offered during the year

Value added courses	Date of introduction	Number of students enrolled
PG Diploma (Cellular and Molecular Diagnostics)	March 2018	Nil
Certificate Course in Bioinformatics	February 2007	20

1.3.2 Field Projects / Internships under taken during the year

Project/Programme Title	No. of students enrolled for Field Projects / Internships
PGD Internships (industry)	-
BSc Biotechnology	51
MSc Medical Biotechnology	20
MSc Molecular Biology & Human Genetics	19
MSc Bioinformatics	15
MSc Systems Biology	9
MSc by Research in Life Sciences	1

1.4 Feedback System

1.4.1 Whether structured feedback received from all the stakeholders.

1) Students	2) Teachers	3) Employers	4) Alumni	5) Parents
Yes	Yes	Yes	Yes/ No	Yes/ No

1.4.2 How the feedback obtained is being analyzed and utilized for overall development of the institution? (maximum 500 words)

Students provide feedback on the university services and faculty through the secure online portals. Faculty provide feedback on the university services and the respective heads of departments. In addition, feedback is obtained from other stakeholders for varying purposes. All feedback is made available to the concerned faculty member/s for suitable corrective action, where needed. If any of the feedback is below the minimum expectations of the institution, then the personnel concerned meet to discuss the ways to improve those aspects. The institution also receives feedback on the curriculum from the students and other external experts regularly and strives to revise the curriculum as required.

CRITERION II -TEACHING-LEARNING AND EVALUATION

2.1 Student Enrolment and Profile

2.1. 1 Demand Ratio during the year

Name of the Programme	Number of seats available	Number of applications received	Students Enrolled
BSc Biotechnology	60	1308	58
MSc Medical Biotechnology	20		16
MSc Molecular Biology & Human Genetics	28		27
MSc by Research in Life Sciences	5	553	0
MSc Systems Biology	10		9
MSc Genome Engineering	10		10
MSc Bioinformatics	15	129	15

2.2 Catering to Student Diversity

2.2.1. Student - Full time teacher ratio (current year data)

Year	Number of students enrolled in the institution (UG)	Number of students enrolled in the institution (PG)	Number of full time teachers available in the institution teaching only UG courses	Number of full time teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses
2020-21	169	141	NA	NA	26

2.3 Teaching - Learning Process

2.3.1 Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)

Number of teachers on roll	Number of teachers using ICT *(LMS, e-Resources)*	ICT tools and resources available	Number of ICT enabled classrooms	Number of smart classrooms	E-resources and techniques used
26	26	Computers, Laptops, Overhead LCD projectors and screens, scanners, audio-visual aids with internet connectivity	9	1	Online databases, journals, videos, e-books, online teaching platforms such as Teams, Skype etc.

2.3.2 Students mentoring system available in the institution? Give details. (maximum 500 words)

Every undergraduate gaining first year admission to the BSc course is allocated a Teacher-Guardian, who is a faculty member of the institution. A teacher-guardian has about 6-8 wards under his/her custody. These teacher-guardians provide assistance for the students to acclimatize to the new environs, liaise between the students and parents in matters pertaining to student welfare, mentor the students to ensure that they progress in their academic activities and performance, and where students lack, provide suitable curricular suggestions for improvement. The students and teacher-guardians meet regularly to discuss any pertinent issues. In addition, every program has its own class teachers who are responsible for the overall conduct and performance of the students in their respective programs. Students gaining admission to the postgraduate programs have their class teachers, who act as their mentors. In addition to all the above, all the faculty members of the institution take responsibility to address any specific requirements of the students that affects their studies and try to provide better learning opportunities. The heads of the department and the head of institution regularly receive feedback from the faculty members and students to ensure the conduct, development and progress of students.

Number of students enrolled in the institution	Number of fulltime teachers	Mentor: Mentee Ratio
310	26	1:12

2.4 Teacher Profile and Quality

2.4.1 Number of full time teachers appointed during the year

No. of sanctioned positions	No. of filled positions	Vacant positions	Positions filled during the current year	No. of faculty with Ph.D.
0	0	0	1	22

2.4.2 Honours and recognitions received by teachers
(received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year)

Year of award	Name of full time teachers receiving awards from state level, national level, international level	Designation	Name of the award, fellowship, received from Government or recognized bodies

2.5 Evaluation Process and Reforms

2.5.1 Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

Programme Name	Programme Code	Semester/ year	Last date of the last semester-end/ year-end examination	Date of declaration of results of semester-end/ year-end examination
BSc	017L01	1/1	02-03-2021	29-03-2021
		2/1	22-07-2021	02-08-2021
		3/2	21-01-2021	28-01-2021

		4/2	13-07-2021	27-07-2021
		5/3	09-02-2021	18-02-2021
		6/3	23-07-2021	20-08-2021
MSc	017L02 017L03 017L08	1/1	17-03-2021	24-03-2021
		2/1	26-07-2021	02-08-2021
		3/2	23-02-2021	04-03-2021
		4/2	28-07-2021	30-07-2021
MSc	017L06	1/1	17-03-2021	24-03-2021
		2/1	26-07-2021	02-08-2021
		3/2	22-02-2021	04-03-2021
		4/2	29-07-2021	30-07-2021
MSc	017L09	1/1	18-03-2021	24-03-2021
		2/1	26-07-2021	02-08-2021
		3/2	22-02-2021	04-03-2021
		4/2	29-07-2021	30-07-2021
MSc	017L10	1/1	18-03-2021	24-03-2021
		2/1	26-07-2021	02-08-2021
PGD	017L07	1/1	--	--
		2/1	--	--

2.5.2 Reforms initiated on Continuous Internal Evaluation (CIE) system at the institutional level (250 words)

Student assessment is conducted through separate examinations, both internally and externally. In addition, students are evaluated for their soft skills via presentations and related aspects. Faculty members also provide continuous assessment of students during the classes, their ability to interact, learn and perform.
During the COVID pandemic, based on decisions made by government and the university, the School conducted onsite and virtual examinations, as and when possible. Where both these mode of examinations were not possible, the final marks of the semesters were determined based on the continuous and internal assessments of the semester, along with prior performance of the student, in line with the guidelines of the UGC.

2.5.3 Academic calendar prepared and adhered for conduct of Examination and other related matters (250 words)

At the beginning of every semester, the corresponding academic calendar is circulated among all faculty members, mentioning the respective dates for sessional examinations, evaluation and related matters. In addition to this, the institution sends regular communication via circulars to the faculty members just before the start of the examinations mentioning the last date for evaluation and submission of marks. This ensures that the concerned are able to meet the relevant deadlines and the resultant declaration of results happens on time. If there are exceptions in meeting deadlines, an explanation is sought from the concerned faculty member/s. Any relevant and persistent issues related to the examinations and evaluation are further discussed in faculty meetings and suitable remedial measures introduced.
With the COVID-induced lockdowns and restrictions, the curriculum was covered through virtual sessions for theory courses and a combined virtual demonstration followed by onsite classes for practical courses. Academic calendar and time schedules for each of these sessions were prepared in advance, communicated to all stakeholders and adhered to, despite the fluidity of the situation throughout the year. Examinations were also conducted either virtually or onsite, so that student learning and progress were not delayed.

2.6 Student Performance and Learning Outcomes

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)

The program outcomes, program specific outcomes and course outcomes for all programs have been stated and provided to all students and stakeholders

2.6.2 Pass percentage of students

Programme Code	Programme name	Number of students appeared in the final year examination	Number of students passed in final semester/year examination	Pass Percentage
017L01	BSc Biotechnology	51	51	100%
017L02	MSc Medical Biotechnology	20	20	100%

017L03	MSc Molecular Biology & Human Genetics	19	19	100%
017L06	MSc Bioinformatics	15	15	100%
017L07	PG Diploma (CMD)	-	-	100%
017L08	MSc Research in Life Sciences	01	01	100%
017L09	MSc Systems Biology	09	09	100%

2.7 Student Satisfaction Survey

2.7.1 Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

Student Satisfaction Survey on overall institutional services is conducted centrally by MAHE, Manipal. Student feedback on faculty in the past year is above the required criteria set by the university (min. 3.5/5). The faculty members are able to see the student feedback on various aspects of their performance at the end of every semester and are encouraged to rectify/modify their actions and needs accordingly. The annual appraisal of the faculty members includes this feedback as an essential and objective component.

CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

3.1 Resource Mobilization for Research

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

Nature of the Project	Duration	Name of the funding Agency	Total grant sanctioned	Amount received during the Academic year
Major projects	1-5 years	DBT, IGSTC, DST-SERB, ICMR, KBITS, VGST	106776845.00	29585550.00
Minor Projects				
Interdisciplinary Projects				
Industry sponsored Projects		Pratiksha Trust, SP Pune University, Atlantis Sciences India (P) Ltd.	10255223.00	5742023.00
Projects sponsored by the University/ College				
Students Research Projects *(other than compulsory by the College)*				
International Projects				
Any other(Specify)		Consultancy, Diagnostics	2036300.00	2036300.00
Total			**119068368.00**	**37363873.00**

3.2 Innovation Ecosystem

3.2.1 Workshops/Seminars Conducted on Intellectual Property Rights **(IPR)** and Industry-Academia Innovative practices during the year

Title of Workshop/Seminar	Name of the Dept.	Date(s)

3.2.2 Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of the Awardee	Awarding Agency	Date of Award	Category
ESI Kudos Award	Ms Chandini B	European Science Institute and University of Grenoble-Alpes, France	July 2020	Student

Third place in Photography competition – Best Shot conducted by Department of Commerce, MAHE, Manipal	Ms. Soumyabrata Banik	MAHE, Manipal		Student
ICMR Senior Research Fellowship for "Cancer Integromics; Identifying the cancer signature through multi-omics data integration"	Mr. Pradyumna J	ICMR, Government of India	Jan 2021	PhD Scholar
ICMR Senior Research Fellowship for "Structural and functional analysis of mutation in APEX2 identified through exome sequencing and its implication in etiology of atypical ataxia"	Ms. Sima Chaudhari	ICMR, Government of India	March 2021	PhD Scholar
ICMR Senior Research Fellowship for "Investigating the Role of Calcium - Exosomal Axis and Associated Signaling Pathways in Cervical Cancer"	Ms. Sangavi E	ICMR, Government of India	March 2021	PhD Scholar
ICMR Senior Research Fellowship for "Omics-based Identification of Potential Biomarkers for Bisphenol A Exposed Polycystic Ovarian Syndrome in Indian Women"	Ms. Navya Prabhu	ICMR, Government of India	March 2021	PhD Scholar

3.2.3 No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Centre	Name	Sponsored by

Name of the Start-up	Nature of Start-up	Date of commencement

3.3 Research Publications and Awards

3.3.1 Incentive to the teachers who receive recognition/awards

State	National	International

3.3.2 PhDs awarded during the year *(applicable for PG College, Research Center)*

Name of the Department	No. of PhDs Awarded
Department of Cell & Molecular Biology	2
Department of Ageing Research	1
Department of Radiation Biology & Toxicology	1
Department of Biotechnology	2

3.3.3 Research Publications in the Journals notified on UGC website during the year

	Department	No. of Publication	Average Impact Factor, if any
National	MSLS, MAHE	2	**~1**
International	MSLS, MAHE	94	~4

3.3.4 Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

Department	No. of publication
Department of Cell and Molecular Biology, Biotechnology	2

3.3.5 Bibliometrics of the publications during the last Academic year based on average citation index in Scopus/ Web of Science or Pub Med/ Indian Citation Index

Title of the paper	Name of the author	Title of the journal	Year of publication	Citation Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self citations

Scopus link: https://www.scopus.com/results/results.uri?cc=10&sort=plf-f&src=s&nlo=&nlr=&nls=&sid=8540d704b90b3d26438f35fa4cfd47ce&sot=aff&sdt=a&sl=15&s=AF-ID%2860114270%29&ss=plf-f&ps=r-f&editSaveSearch=&origin=cto&zone=resultslist

3.3.6 h-index of the Institutional Publications during the year. (based on Scopus/ Web of science)

Title of the paper	Name of the author	Title of the journal	Year of publication	h-index	Number of citations excluding self citations	Institutional affiliation as mentioned in the publication
Scopus link: https://www.scopus.com/cto2/main.uri?origin=resultslist&stateKey=CTOF_1352831054				21	1717	Manipal School of Life Sciences / School of Life Sciences, Manipal

3.3.7 Faculty participation in Seminars/Conferences and Symposia during the year :

No. of Faculty	International level	National level	State level	Local level
Attended Seminars/ Workshops	5	1	1	0
Presented papers	0	1	0	0
Resource Persons	4	3	0	0

3.4 Extension Activities

3.4.1 Number of extension and outreach programmes conducted in collaboration with industry, community and Non-Government Organisations through NSS/NCC/Red cross/Youth Red Cross (YRC) etc., during the year

Title of the Activities	Organising unit/ agency/ collaborating agency	Number of teachers co-ordinated such activities	Number of students participated in such activities

3.4.2 Awards and recognition received for extension activities from Government and other recognized bodies during the year

Name of the Activity	Award/recognition	Awarding bodies	No. of Students benefited

3.4.3 Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

Name of the scheme	Organising unit/ agency/ collaborating agency	Name of the activity	Number of teachers coordinated such activities	Number of students participated in such activities
World Samskrita Day (4.8.2020)	MSLS, Manipal	Talk	26	~150
Vigilance Awareness Week (27.10.2020 to 2.11.2020)	MSLS, Manipal	Talk, Pledge	26	~150
National Constitution Day (26.11.2020)	MSLS, Manipal	Talk	26	~250

National Youth Day (12.1.2021)	MSLS, Manipal	Talk	26	~150
National Science Day Residential Training Program (23.2.2021 to 27.2.2021)	MSLS, Manipal	Week-long residential training program for School toppers in and around Manipal	26	~75
National Science Day Celebrations (28.2.2021)	MSLS, Manipal	Science Exhibition	26	~25
Azadi ki Amrut Mahotsav (12.3.2021)	MSLS, Manipal	Essay Writing Competition	26	~50
International Yoga Day (21.6.2021)	MSLS, Manipal	Essay Writing Competition	26	~25

3.5 Collaborations

3.5.1 Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of Activity	Participant	Source of financial support	Duration
Semesters Abroad Program	5 MSc Students	European Scholarship at UGA, Grenoble, France	12 months

3.5.2 Linkages with institutions/industries for internship, on-the-job training, project work, sharing of research facilities etc. during the year

Nature of linkage	Title of the linkage	Name of the partnering institution/ industry /research lab with contact details	Duration (From-To)	Participant
Internship	MSc project work	Covance P Ltd., Bengaluru	1/3 to 31/7/2021	Mr Sourav Patege, Ms Keerthana K, Ms Varada Menon
Research project	MSc project work	Mazumdar-Shaw CTR, Bengaluru	1/3 to 31/7/2021	Ms Neha Damodar
Internship	MSc project work	Relevance P Ltd., Bengaluru	1/3 to 31/7/2021	Mr Bhagesh B Hunakunti
Internship	MSc project work	4basecare P Ltd., Bengaluru	1/3 to 31/7/2021	Ms Rukaiya V, Ms Bhargavi KS

3.5.3 MoUs signed with institutions of national, international importance, other universities, industries, corporate houses etc. during the year

Organisation	Date of MoU signed	Purpose and Activities	Number of students/teachers participated under MoUs
Bi Biotech India Pvt Ltd., New Delhi	2020	General agreement on research and education	2
Department of Biotechnology, Government of India, New Delhi	2020	MoU for roles and responsibilities of participants in project	3
Prathiksha Trust, Bangalore	2020	MoU to support research projects in science	3
Queensland University of Technology, Australia	2020	Extension of student exchange agreement	
Alantis Science Pvt Ltd., Manipal	2020	MoU to provide quality testing, projects, services and diagnostics	
Kasturba Hospital, Manipal	2020	MoU for diagnostics	

Omniactive Health Technologies Ltd, Mumbai	2020	NDCA to jointly design research activities	
Department of Science & Technology, Government of India, New Delhi	2021	MoU for DST-FIST	
The University of British Columbia, Canada	2021	Statement of Cooperation	
FPT University, Vietnam	2021	Agreement for Academic Cooperation	
University of Grenoble-Alpes, France	2021	MoU on student exchange and academic cooperation	13
Relevance Lab, Bangalore	2021	General Agreement on Cooperation	4

CRITERION IV – INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 Budget allocation, excluding salary for infrastructure augmentation during the year

Budget allocated for infrastructure augmentation	Budget utilized for infrastructure development
697.03	942.25

4.1.2 Details of augmentation in infrastructure facilities during the year

Facilities	Existing	Newly added
Campus area	63500 sq. ft.	-
Class rooms	7	-
Laboratories	22	7
Seminar Halls	2	-
Classrooms with LCD facilities	7	-
Classrooms with Wi-Fi/ LAN	7	-
Seminar halls with ICT facilities	2	-
Video Centre	1	-
No. of important equipments purchased (≥ 1-0 lakh) during the current year.	>515	15
Value of the equipment purchased during the year (Rs. in Lakhs)		156.13
Others		

4.2 Library as a Learning Resource

4.2.1 Library is automated {Integrated Library Management System -ILMS}

Name of the ILMS software	Nature of automation (fully or partially)	Version	Year of automation

4.2.1 Library Services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	457		4		461	
Reference Books						
e-Books						
Journals						
e-Journals						
Digital Database						

CD & Video								
Library automation								
Weeding (Hard & Soft)								
Others (specify)								
As available in MAHE Central Library resources								

4.3 IT Infrastructure

4.3.1 Technology Upgradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Available band width (MGBPS)	Others
Existing	207	115 in 3	Yes	NA	NA	89	Inclusive	1GBPS (Shared)	
Added	02	NA	Yes	NA	NA	NA	NA	NA	
Total	209	115 in 3	Yes	NA	NA	89	NA	1GBPS (Shared)	

4.3.2 Bandwidth available of internet connection in the Institution (Leased line)

1 GBPS (shared)

4.3.3 Facility for e-content

Name of the e-content development facility	Provide the link of the videos and media centre and recording facility

4.3.4 E-content developed by teachers such as: e-PG-Pathshala, CEC (under e-PG-Pathshala CEC (Under Graduate) SWAYAM other MOOCs platform NPTEL/NMEICT/any other Government initiatives & institutional (Learning Management System (LMS) etc

Name of the teacher	Name of the module	Platform on which module is developed	Date of launching e - content

4.4 Maintenance of Campus Infrastructure

4.4.1 Expenditure incurred on maintenance of physical facilities and academic support facilities, excluding salary component, during the year

Assigned budget on academic facilities	Expenditure incurred on maintenance of academic facilities	Assigned budget on physical facilities	Expenditure incurred on maintenance of physical facilities

4.4.2 Procedures and policies for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc. *(maximum 500 words)*   (information to be available in institutional Website, provide link)

MSLS, MAHE has established modern facilities within its premises, which include laboratories, library, classrooms, computers with internet and Wi-Fi, canteen etc. All support facilities are accessible for the respective students, researchers, technicians and staff, who undergo relevant training to gain experience. The laboratory instruments are maintained through annual maintenance contracts and support systems (as applicable). Usage of equipment is documented and procedures for repairs and servicing are established and documented. Dedicated staff members are responsible for the maintenance of laboratory equipment. The library has a collection of reference textbooks, theses and is accessible for the students and researchers during the day. The MAHE Health Sciences Library is the main resource, however, for students and researchers and is open for more than 15 hours a day. The library also has a robust online digital repository of research articles, journals, books and databases that are accessible through the intranet within the campus. Sports facilities are maintained by MAHE centrally and are available for all stakeholders of MAHE, as required. Procedures and policies have been established and communicated regularly to all concerned.

CRITERION V - STUDENT SUPPORT AND PROGRESSION

5.1 Student Support

5.1.1 Scholarships and Financial Support

	Name /Title of the scheme	Number of students	Amount in Rupees
Financial support from institution	Konkani Scholarship, SAGE Scholarship, Staff Child/Spouse Scholarship	9	2428530.00 (*together for both categorie*s)
Financial support from other sources			
a) National	Backward community/Minority Scholarships	6	(*see above*)
b) International			

5.1.2 Number of capability enhancement and development schemes such as Soft skill development, Remedial coaching, Language lab, Bridge courses, Yoga, Meditation, Personal Counselling and Mentoring etc.,

Name of the capability enhancement scheme	Date of implementation	Number of students enrolled	Agencies involved
Life Sciences Sector Skill Development Courses (LSSSDC) (training as Biologist and Research Associate)	2018	NA	LSSSDC, New Delhi, Tel: +911141042407

5.1.3 Students benefited by guidance for competitive examinations and career counselling offered by the institution during the year

Year	Name of the scheme	Number of benefited students by Guidance for Competitive examination	Number of benefited students by Career Counselling activities	Number of students who have passed in the competitive exam	Number of students placed
2020-21	CSIR-JRF/ ICMR-JRF NET Preparative classes			5	

5.1.4 Institutional mechanism for transparency, timely redressal of student grievances, Prevention of sexual harassment and ragging cases during the year

Total grievances received	No. of grievances redressed	Average number of days for grievance redressal

5.2 Student Progression

5.2.1 Details of campus placement during the year

On campus			**Off Campus**		
Name of Organizations Visited	Number of Students Participated	Number of Students Placed	Name of Organizations Visited	Number of Students Participated	Number of Students Placed

5.2.2 Student progression to higher education in percentage during the year

Year	Number of students	Programme graduated	Department graduated	Name of institution joined	Name of Programme admitted

	enrolling into higher education	from	from		to
2020-2021	1	BSc	MSLS	IIT-Bombay, Mumbai	MSc Biotechnology
	1	BSc	MSLS	Ghent University, Belgium	MSc Biochemistry and Biotechnology
	1	BSc	MSLS	Amrita, Kochi	MSc Nanobiotechnology
	1	BSc	MSLS	University of Arizona, USA	MS Molecular Medicine
	1	BSc	MSLS	University of Groningen, the Netherlands	MSc Molecular Medicine & Innovative Treatment
	8	BSc	MSLS	MSLS, Manipal	MSc
	1	PGD	MSLS	IIT, Guwahati	MTech Biotechnology
	1	BSc	MSLS	WGSHA, Manipal	MSc Dietetics & Applied Nutrition
	1	BSc	MSLS	Amrita, Kochi	MSc Biotechnology
	2	MSc	MSLS	University of Nebraska MC, USA	PhD
	1	MSc	MSLS	DY Patil University, Pune	PhD
	1	MSc	MSLS	University of Grenoble-Alpes, France	PhD
	1	MSc	MSLS	University of Paris, France	PhD

5.2.3 Students qualifying in state/ national/ international level examinations during the year (e.g.: NET/SET/SLET/GATE/GMAT/CAT/GRE/TOEFL/Civil Services/State Government Services)

Items	No. of Students selected/ qualifying	Registration number/roll number for the exam
NET	1	KK15600202
SET		
SLET		
GATE	4	BT20S31251100 XL21S61227074 XL21S61233060 BT20S31248019
GMAT		
CAT		
GRE		
TOEFL		
Civil Services		
State Government Services		
Any Other	1 (IIT-JAM) 2 (IELTS) 1 (ICMR-JRF)	BT107F144 374327, 209686 29379

5.2.4 Sports and cultural activities / competitions organised at the institution level during the year

Activity	Level	Participants
Nil	Nil	Nil

5.3 Student Participation and Activities

5.3.1 Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one)

Year	Name of the award/ medal	National/ International	Sports	Cultural	Student ID number	Name of the student
2020-21	Nil					

5.3.2 Activity of Student Council & representation of students on academic & administrative bodies/committees of the institution (maximum 500 words)

The students elect the Student Council at the start of every academic year, through a voting process. All programs have elected representatives in the Council. The elected members choose further student representatives for various committees of the council. There are seven such committees including cultural, editorial, finance, photography, social, social media and sports. The cultural committee in turn has clubs for dance, arts and drama, debate and such. The Student Council elected during 2019-20 organized, conducted and participated in several events of the School and the university. The students actively participated in all UGC-mandated activities such as the Rashtriya Ekta Divas, Matribasha Divas, Vigilance Awareness Week and Swachhata Pakhwada, among others including Independence and Republic days, and Teachers Day. The Students Council and several students helped in the conduct of open science exhibition as part of the National Science Day celebrations at the School. In addition, there were active contributions through social committee in conducting mental health awareness programs, organizing visit to old age home and teaching schoolchildren. The sports committee was involved in organizing athletic and sports events throughout the year, including Annual Athletic Meet. The literary and cultural committee organized two events of 'Primer', an intra-college fest of cultural extravaganza. However, the pandemic put paid to conduct and participation in 'Utsav' – the inter-college university cultural fest. The students also celebrated Onam, Deepavali and Halloween in the year. The Annual Day was also cancelled due to the pandemic.

The President of the Student Council has representation in the Board of Studies meetings as well as the IQAC meetings. Nominees of the council attend these meetings. In addition, students represent the School in university-level meetings pertaining to student affairs, hostels, sports events, cultural activities among others. All their contributions are discussed and implemented as applicable.

5.3 Alumni Engagement

5.3.1 Whether the institution has registered Alumni Association? Yes/No, if yes give details (maximum 500 words):

No, it is part of MAHE Alumni Relations

5.3.2 No. of ~~registered~~ enrolled Alumni: 1348

5.3.3 Alumni contribution during the year (in Rupees) **:** Nil

5.3.4 Meetings/activities organized by Alumni Association **:** 12

CRITERION VI –GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership

6.1.1 Mention two practices of decentralization and participative management during the last year (maximum 500 words)

6.1.2 Does the institution have a Management Information System (MIS)?
Yes/No/Partial: Yes

MSLS has a well-built management information system to support smooth interaction and activities for students, faculty members, staff and management through various portals such as Student Information Systems (SIS), Students Lifecycle Management (SLcM), Employee Service Platform (ESP), Purchase Management through PeopleSoft portal, among others, supported by MAHE, Manipal

6.2 Strategy Development and Deployment

6.2.1 Quality improvement strategies adopted by the institution for each of the following (within 100 words each)**:**

❖ Curriculum Development: The curriculum for all the programs at the School are regularly scrutinized for the content, relevance and suitability to the program and contemporariness for the graduating students, while also ensuring compliance to the regulatory requirements. Towards this, experts from academia and industry, both in India and abroad are approached for their inputs, based on which the necessary modifications for existing programs and development of curriculum for new programs are carried out. The Board of Studies and Academic Senate of the institution play an important role in ensuring the relevance and approval of all the curricula of the School.

❖ Teaching and Learning: Teaching processes are streamlined through requirements for teaching schedule,

	completion of syllabus, examination and evaluation on time, matching that described in the academic calendar, through the use of classroom and online teaching, audio-visual aids, practical sessions and other modes prescribed in the curriculum. Learning is monitored through continuous assessment and evaluation of the students, coaching class as required and by involving parents, where required. Efforts made to minimize absenteeism in classes by mandating attendance for appearing in sessional examinations are being monitored for effectiveness
❖	Examination and Evaluation: All examinations for UG, PG and PGD programs are conducted with the help of digital e-pads, without the use of papers and other online tools available. The evaluation is thus digital and paperless, thereby helping in faster completion of the evaluation and declaration of results. Students also have the option of supplementary examinations soon after results declaration, thereby ensuring that their second chance at repeating examinations happens sooner, without the loss of time.
❖	Research and Development: With research being the primary focus of the School, the number and quantum of support for research projects from national and international funding agencies have been prioritized, resulting in an increase and diversity of the research areas. This has also resulted in improvement in the quality and quantity of research outcomes in terms of publications in top-quartile, indexed journals and patent applications. Infrastructure upgradation, improvement and maintenance has been identified as a requirement and suitable measures are underway to address the same.
❖	Library, ICT and Physical Infrastructure / Instrumentation: The library resources are centralized at the MAHE Health Sciences Library, although the School maintains a relatively small collection of about 400 books in its own library. The entire campus is Wi-Fi enabled and equipped with necessary computers and other connectivity tools to impart teaching and enable learning. The School has one of the modern infrastructure, research instrumentation including high-end equipment and diverse scientific facilities available in this region of the country.
❖	Human Resource Management
❖	Industry Interaction / Collaboration: The School actively seeks and promotes industry collaborations through intermittent interactions. Research programs have industry partners where necessary. The School hosts the BiSEP PG Diploma program in Cellular and Molecular Diagnostics supported by the Government of Karnataka, which requires active collaborations with the industry since students undertake internship with such industrial partners every year. Thus, the School initiates frequent interactions through lectures, seminars, webinars and other drives to ensure that personnel from industry are associated with the activities of the School. In addition, the School has also MoUs with industries across the country.
❖	Admission of Students: Through concerted efforts by the institution and associated departments at the university, admissions to all programs were satisfactorily completed as per requirements. The entrance examinations for PG programs were conducted separately to ensure better distribution of interested applicants and quality of admissions.

6.2.2 : Implementation of e-governance in areas of operations:
❖   Planning and Development
❖   Administration
❖   Finance and Accounts
❖   Student Admission and Support
❖   Examination

6.3 Faculty Empowerment Strategies

6.3.1 Teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

Year	Name of teacher	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is	Amount of support

				provided	

6.3.2 Number of professional development / administrative training programmes organized by the College for teaching and non-teaching staff during the year

Year	Title of the professional development programme organised for teaching staff	Title of the administrative training programme organised for non-teaching staff	Dates (from-to)	No. of participants (Teaching staff)	No. of participants (Non-teaching staff)
2020-21	Webinar on "Scientific Writing for Journals"	-	31-07-2020	1	-
	M-FITLAR: an orientation module on Fundamentals in Teaching-Learning, Academic Leadership and Research	-	28-12-2020	1	-
	Webinar on "Advanced Computer Aided Drug/Biologics Design"	-	04-01-2021	1	-
	Webinar on "Plant-Environment Interactions and Sustainable production	-	10-02-2021	3	-
	Online training series on Analytical Techniques	-	20-03-2021	1	-
	A Training Program on Integrated Data Governance Training	-	30-06-2021	2	-
	-	A Training Program on Integrated Data Governance Training	30-06-2021	-	2
	-	Training on 'Human Resource Management System Software'	10-03-2021	-	1

6.3.3 No. of teachers attending professional development programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes during the year

Title of the professional development programme	Number of teachers who attended	Date and Duration (from – to)
Training Course on "Laboratory Management Systems & Internal Audit as per ISO 15189-2012"	1	30-07-2020 to 02-08-2020
Webinar on Essentials of Medical Writing	1	21-08-2020
Impartus Lecture Capturing System Training	25	07-09-2020
Innovative Teaching-Learning Methods (Online)	1	19-09-2020
DBT Webinar: Showcasing Demonstrated Waste-to-Value Technologies	1	01-10-2020
EHS Webinar 2 - Biosafety and Biocontainment Requirements for Biopharma Research and Manufacturing	1	15-10-2020
Webinar on the response of the DBTs Autonomous Institutes to Covid 19 (Part III)	1	15-10-2020
International Webinar on role of functional nanomaterials in combating covid-19 pandemic	1	29-10-2020 to 30-10-2020

DST & ACS Virtual Workshop	1	30-10-2020
International online webinar titled "Data Analytics for Non-Coders"	1	31-10-2020
Webinar on recent trends in Antenna Engineering and Nanotechnology	1	09-11-2020 to 14-11-2020
EHS Webinar 4 - Building a safe and Resource-Efficient Laboratory	1	12-11-2020
Webinar on the response of the DBTs Autonomous Institutes to Covid 19	1	19-11-2020
EHS Webinar 5 - Adopting Green and Sustainable Practices in Biopharma Sector	1	19-11-2020
EHS Webinar 6 - Developing skills and Career as EHS Professional in India	1	26-11-2020
International Webinar Series on Food Chemical and Nanomaterials Toxicity	1	26-11-2020
IRMI Webinar: Research costing as a tool for enabling a sustainable research environment	1	27-11-2020
Workshop on Publishing 101: Cancer Research Books	1	30-11-2020
National Level Training on Animal Welfare	2	07-12-2020 to 12-12-2020
Online Training "National Level Training on Animal Welfare"	1	11-01-2021 to 15-01-2021
Workshop on Science Communication: Impact Beyond Publication organized by DBT/Wellcome Trust India Alliance	1	16-02-2021
Body Language and Teaching	1	19-03-2021
Webinar on role of chromosomal Microarray in the Era of genome Sequencing	1	22-04-2021
Online Technical Workshop 'Next Generation Sequencing (NGS)	3	13-05-2021
How to publish in Medical Journals	3	22-06-2021
Essential Program in Hematology Laboratory Management	1	22-06-2021

6.3.4 Faculty and Staff recruitment (no. for permanent/fulltime recruitment):

Teaching		Non-teaching	
Permanent	Fulltime	Permanent	Fulltime/temporary
1 (26)	0 (0)	1 (27)	1 (12)

6.3.5 Welfare schemes for

Teaching	Provident fund, school fees for reimbursement, LTC, Housing allotment, MAHE interest subsidy on utility loan subsidy, Medicare facility, National Pension Scheme, Sodexo meal coupons, Scholarship on course fee of spouse, children, employees, support for attending conferences, publications, best teacher award.
Non-teaching	Provident fund, school fees reimbursement, Medicare facility, ESI scheme, scholarship for course fee for spouse, children and employees, Felicitation of employees, Best service award
Students	Medicare facilities, Anti-ragging committee, Counselling, Felicitation of students for co-curricular and academic activities, Support for attending conferences, Scholarships

6.4 Financial Management and Resource Mobilization

6.4.1 Institution conducts internal and external financial audits regularly   (with in 100 words each)

The Finance Audits are conducted centrally at MAHE

6.4.2 Funds / Grants received from management, non-government bodies, individuals, philanthropies during

the year (not covered in Criterion III)		
Name of the non-government funding agencies/ individuals	Funds/ Grants received in Rs.	Purpose
--	**Nil**	**--**

6.4.2 Total corpus fund generated

6.5 Internal Quality Assurance System

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

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	TUV	Yes	Self
Administrative	Yes	TUV	Yes	Self

6.5.2 Activities and support from the Parent – Teacher Association (at least three)

Inputs from parents/guardians, where applicable, are incorporated to monitor the progress of students

6.5.3 Development programmes for support staff (at least three)

Undertaken at the university level

6.5.4 Post Accreditation initiative(s) (mention at least three)

6.5.5

a. Submission of Data for AISHE portal   : Yes

b. Participation in NIRF   : Yes

c. ISO Certification   : Yes

d. NBA or any other quality audit   : Yes – NABL Accreditation

6.5.6 Number of Quality Initiatives undertaken during the year

Year	Name of quality initiative by IQAC	Date of conducting activity	Duration (from----- to------)	Number of participants

CRITERION VII – INSTITUTIONAL VALUES AND BEST PRACTICES

7.1 - Institutional Values and Social Responsibilities

7.1.1 Gender Equity (Number of gender equity promotion programmes organized by the institution during the year)

Title of the programme	Period **(from-to)**	Participants	
		Female	Male

7.1.2 Environmental Consciousness and Sustainability/Alternate Energy initiatives such as:

Percentage of power requirement of the College met by the renewable energy sources

7.1.3 Differently abled (Divyangjan) friendliness

Items Facilities	Yes/No	No. of Beneficiaries
Physical facilities	Yes	0
Provision for lift	Yes	0
Ramp/ Rails	Yes	0
Braille Software/facilities	No	NA
Rest Rooms	No	NA

Scribes for examination	No	NA
Special skill development for differently abled students	No	NA
Any other similar facility	No	NA

7.1.4 Inclusion and Situatedness

Enlist most important initiatives taken to address locational advantages and disadvantages during the year

Year	Number of initiatives to address locational advantages and disadvantages	Number of initiatives taken to engage with and contribute to local community	Date and duration of the initiative	Name of the initiative	Issues addressed	Number of participating students and staff
2021	-	1	23-02-2021 to 28-02-2021 (6 days)	Non-residential Training Program	Science teaching and hands-on training for Class IX & X toppers from schools in and around Manipal	50
2021	1	-	27-02-2021 to 28-02-2021 (1 day)	Science Exhibition	Science Exhibition to all school students, teachers in and around Manipal	150

7.1.5 Human Values and Professional Ethics

Code of conduct (handbooks) for various stakeholders

Title	Date of Publication	Follow up (maximum 100 words each)

7.1.6 Activities conducted for promotion of universal Values and Ethics

Activity	Duration (from-------to-------)	Number of participants
Independence Day	15.08.2020 – 15.08.2020	Virtual
Republic Day	26.01.2021 – 26.01.2021	Virtual

7.1.7 Initiatives taken by the institution to make the campus eco-friendly (at least five)

Installation of energy-efficient solar and LED lamps where possible, Segregation of wastes, Installation of eco-friendly air-conditioners, Awareness on energy saving and management, Part of ISO 14001 EMS, Conduct of Swachch Bharath campaign among students and staff

7.2 Best Practices

Describe at least two institutional best practices
Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link

Title of the Best Practices - Research Project work in all degree programs
Objectives: To provide research laboratory exposure to all students graduating from the various programs offered by MSLS, MAHE.
The context: Scientific research in the areas related to biotechnology and bioinformatics require scientific knowledge, technical skills and an ability to interpret data and innovate. Such skills are acquired only through hands-on experimentation and exposure to a laboratory/research environment. When such concept is introduced in the curricula, its implementation is streamlined.
The Practice: Every program offered by MSLS, MAHE culminates in a research project for a period of at least one semester, wherein students pursue laboratory work on a set of aims and objectives, collate and present the results in the form of a dissertation and defend the same during a viva-voce examination. This provides them with the exposure to

the research laboratory set-up and the experience that helps them in their future endeavours.

Evidence of Success: Close to three-fourths of the graduates choose to pursue a higher degree involving research component or in technical positions in an industrial set-up. Their hands-on research exposure during their degree programs facilitates their admission and/or employment

<u>**Title of the Best Practices**</u> **–** Advanced diagnostic services for patients

Objectives: To provide high-end diagnostic tests to the needy patients of hospitals in and around Manipal on a not-for-profit basis.

The context: Patients visiting several hospitals in the Udupi, Dakshina Kannada and other neighbouring districts have limited access to high-end molecular and/or cytogenetic diagnostic tests, or have to pay exorbitant costs in sample transport and examination. A provision for conducting such advanced diagnostic procedures in close proximity will help such individuals and families, more so if it is done not-for-profit.

The Practice: MSLS, over the course of its decade of existence, has developed infrastructure and in-house capability to perform tests related to DNA sequencing, karyotyping, cytogenetics, and metal estimation. These tests are provided to patients reporting to collaborating hospitals in the region.

Evidence of Success: The diagnostic facilities at MSLS are being used by the respective hospitals of the regions to the tune of about 600-700 samples on average being tested at our facilities every year.

7.3 Institutional Distinctiveness

Provide the details of the performance of the institution in one area distinctive to its vision, priority and thrust
Provide the weblink of the institution in not more than 500 words

The Manipal School of Life Sciences (MAHE, Manipal) focuses on research in the areas of human health using biotechnological interventions, specifically towards diseases such as cancers, infectious, genetic, inherited and metabolic disorders. Recent research in these and associated areas has resulted in close to 200 peer-reviewed and high impact publications in renowned journals in the past five years, through targeted approaches in promoting scientific research in such areas. With 3 granted patents and about 10 more filed patent applications at different stages of scrutiny, faculty members and student researchers continue to make an annual conference presentations and publications. Despite the continued severe problems forced by the coronavirus pandemic, the academic year 2020-21 reflected the continued pursuit of research goals in these thrust and other associated areas. Conferences, symposia, workshops and guest lectures were conducted virtually to promote, share and disseminate knowledge and expertise in the thrust areas of the School. The School continues to expand its horizons through the development of new curriculum for new PG programs such as the one started this year in the area of Genome Engineering, while pushing for new frontiers in its research areas. This has resulted in the plans for novel MSc programs in the areas of Tissue Engineering and Molecular Biophysics in the coming years.

8. **Future Plans of action for next academic year (500 words)**

Start new PG program (MSc Tissue Engineering) in the coming academic year, sustain existing programs, excel in current academic and research programs, enable utilization of facilities in the annex, strive for scholarships and exchange programs at national and international level, increase outreach activities for societal benefit.

Name _____Dr T.G. Vasudevan_____　　　　　*Name _____Dr K. Satyamoorthy_____*

_____　　　　_____

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

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Abbreviations:

CAS	-	Career Advancement Scheme
CAT	-	Common Admission Test
CBCS	-	Choice Based Credit System
CE	-	Centre for Excellence
COP	-	Career Oriented Programme
CPE	-	College with Potential for Excellence
DPE	-	Department with Potential for Excellence
GATE	-	Graduate Aptitude Test
NET	-	National Eligibility Test
PEI	-	Physical Education Institution
SAP	-	Special Assistance Programme
SF	-	Self Financing
SLET	-	State Level Eligibility Test
TEI	-	Teacher Education Institution

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