Sri Lakshmi Narayana Institute of Medical Sciences

Date: 04.05.2019

From

Dr.Jansi Rani
Professor and Head,
Department of Biochemistry,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

To

The Dean,
Sri Lakshmi Narayana Institute of Medical College
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Quality control in clinical laboratory

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: Quality control in clinical laboratory for interns November to December 2019. We solicit your kind permission for the same.

Kind Regards

Dr. Jansi Rani

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean:

The HOD: Dr. Jansi Rani

The Expert: Dr. Kajalakshmy

The committee has discussed about the course and is approved.

Dean
(Sign & Seal)

Subject Expert
(Sign & Seal)

DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY - 605 502.

HOD
(Sign & Seal)

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY - 605 502.

Dr. G. JAYALAKSHMI, BSC.,MBBS.,DTCD.,M.D.,
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Ageram Kudapakkam, Post,
Villanur Commune Puducherry 605 502.

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affliated to Bharath University, Chennai - TN]

Circular

07.04.2018

Sub: Organising Value-added Course: Quality control in clinical Biochemistry. reg

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Quality control in clinical biochemistry"**. The course content and registration form is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before April and May -2018. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

Dr. G. JAYALAKSHMI, BSC.,MBBS.,DTCD.,M.D.,
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Kudapakkam, Post,
Villanur Commune Puducherry-605 502.

Encl: Copy of Course content

VALUE ADDED COURSE

1. Name of the programme & Code

Quality control in clinical Biochemistry-BIO-12

2. Duration & Period

30 hrs & November – December 2019

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Assessment closed

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

1 time Nov- Dec 2020

8. Year of discontinuation: 2020

9. Summary report of each program year-wise

Value Added Course- May –June 2020					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength & Year**
1	BIO 12	**Quality control in clinical laboratory**	Dr. Jansi Rani Dr.Kajalaksmy	MBBS Students	20 students MAY-JUNE 2019)

10. Course Feed Back

Enclosed as Annexure- V

RESOURCE PERSON

1. **Dr.Jansi Rani**
2. **Dr. Kajalakshmy**

COORDINATOR

Dr.Jansi Rani

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY 605 502

Course Proposal

Course Title: **Quality control in clinical Biochemistry**

Course Objectives:

- To understand about quality management to MBBS students
- Quality control in the medical laboratory is a statistical **process** used to monitor and evaluate the analytical **process** that produces patient results
- To control off pre-analytical and analytical variable

Course Outcome: To improvement of quality control in clinical laboratory and helpful for MBBS students

Course Audience: MBBS students 2019 Batch

Course Coordinator: Dr.Jansi Rani

Course Faculties with Qualification and Designation:

1.Dr.Jansi Rani, Professor & HOD

2.Dr.Kajalakshmy, Assistant Professor

Course Curriculum/Topics with schedule (Min of 30 hours)

SlNo	Date	Topic	Time	Hours
1.	3-11-2019	Introduction to quality control biochemistry	2-3p.m	1
2.	4-11-2019	Introduction to quality control biochemistry	4-6p.m	2
3.	5-11-2019	1. Quality Control a. What is Quality Control? b. Quality Control Products c. Regular Testing	4-6p.m	2
4.	6-11-2019	2. Quality Control d. What is Quality Control? e. Quality Control Products	4-6p.m	2

		3. Regular Testing		
5.	8-11-2019	Pre analytical errors	4-6p.m	2
6.	10-11-2019	Pre analytical errors	4-6p.m	2
7.	12-11-2019	Internal quality control	4-6p.m	2
8.	13-11-2019	Internal quality control	4-6p.m	2
9.	14-11-2019	External quality assessment	4-6p.m	2
10.	15-11-2019	External quality assessment	4-6p.m	2
11.	18-11-2019	Levey-Jennings Charts & Westgard Rules.	4-6p.m	2
12.	19-11-2019	Levey-Jennings Charts & Westgard Rules.	4-6p.m	2
13.	21-11-2019	Levey-Jennings Charts & Westgard Rules.	4-5p.m	1
14.	22-11-2019	Six sigma in clinical laboratory	4-6p.m	2
15.	23-11-2019	Six sigma in clinical laboratory	4-6p.m	2
16.	25-11-2019	Six sigma in clinical laboratory	4-5p.m	1
17.	26-11-2019	Practical section- Quality control	4-6p.m	2
		Total		31hrs

REFERENCE BOOKS:

1. Briggs, R. 1996 Analytical Quality Assurance in Water Quality Monitoring. World Health Organization, Geneva

2. HMSO 1994 The Microbiology of Drinking Waters. Report 71. Her Majesty's Stationery Office, London
3. ISO 1984 Development and Operations of Laboratory Proficiency Testing Guide 43(E), International Organization for Standardization, Geneva.

Annexure- I

COURSE DETAILS

Particulars	**Description**
Course Title	**QUALITY CONTROL IN CCLINICAL**
Course Code	BIO02
Topics and content of the course in the Hand book	1. Introduction to quality control biochemistry 2. Quality Control a. What is Quality Control? b. Quality Control Products c. Regular Testing 3. Preanalytical errors 4. Internal quality control 5. External quality assessment 6. Levey-Jennings Charts & Westgard Rules 7. Six sigma in clinical laboratory
Advantages of learning and evaluation	• serve accountability and accreditation requirements; • enhance the reputation of the faculty/department/school/university, and meet external demands for demonstrating quality, quality assurance and quality enhancement • continuously improve themselves, the students and the work of the university. Continuous improvement is both the medium and outcome of quality assurance;
Further learning Opportunities	To development of quality control in clinical laboratory

Course Proposal

Course Title: **Quality control in clinical Biochemistry**

Course Objectives:

- To understand about quality management to MBBS students
- Quality control in the medical laboratory is a statistical **process** used to monitor and evaluate the analytical **process** that produces patient results
- To control off pre-analytical and analytical variable

Course Outcome: To improvement of quality control in clinical laboratory and helpful for MBBS students

Course Audience: MBBS students 2018 Batch

Course Coordinator: Dr.Jansi Rani

Course Faculties with Qualification and Designation:

1.Dr.Jansi Rani, Professor & HOD

2.Dr.Kajalakshmy, Assistant Professor

Course Curriculum/Topics with schedule (Min of 30 hours)

SlNo	Date	Topic	Time	Hours
1.	3-4-2018	Introduction to quality control biochemistry	2-3p.m	1
2.	4-4-2018	Introduction to quality control biochemistry	4-6p.m	2
3.	5-4-2018	1. Quality Control a. What is Quality Control? b. Quality Control Products c. Regular Testing	4-6p.m	2
4.	6-4-2018	2. Quality Control d. What is Quality Control? e. Quality Control Products	4-6p.m	2

		3. Regular Testing		
5.	8-4-2018	Pre analytical errors	4-6p.m	2
6.	10-4-2018	Pre analytical errors	4-6p.m	2
7.	12-4-2018	Internal quality control	4-6p.m	2
8.	13-4-2018	Internal quality control	4-6p.m	2
9.	14-4-2018	External quality assessment	4-6p.m	2
10.	15-4-3028	External quality assessment	4-6p.m	2
11.	18-4-2018	Levey-Jennings Charts & Westgard Rules.	4-6p.m	2
12.	19-4-2018	Levey-Jennings Charts & Westgard Rules.	4-6p.m	2
13.	21-4-2018	Levey-Jennings Charts & Westgard Rules.	4-5p.m	1
14.	22-4-2018	Six sigma in clinical laboratory	4-6p.m	2
15.	23-4-2018	Six sigma in clinical laboratory	4-6p.m	2
16.	25-4-2018	Six sigma in clinical laboratory	4-5p.m	1
17.	26-4-2018	Practical section- Quality control	4-6p.m	2
		Total		31hrs

Key Competencies	Quality improvement
Target Student	MBBS students
Duration	
Theory Session	31 hours
Assessment Procedure	Multiple choice questions

REFERENCE BOOKS:

1. Briggs, R. 1996 Analytical Quality Assurance in Water Quality Monitoring. World Health Organization, Geneva

2. HMSO 1994 The Microbiology of Drinking Waters. Report 71. Her Majesty's Stationery Office, London
3. ISO 1984 Development and Operations of Laboratory Proficiency Testing Guide 43(E), International Organization for Standardization, Geneva.

QUALITY CONTROL IN CLINICAL LABORATORY

PARTICIPANT HAND BOOK

3. SHARPS: These are the items that could cause cuts or puncture wounds, including; □Needles, □Scalpel and other blades, □Knives, □Infusion sets, □Saws, □Broken glass, and nails.

4.PHARMACEUTICAL WASTE: It includes expired, unused, spilt, and contaminated □Pharmaceutical products, □Drugs, □Vaccines, and sera

5. GENOTOXIC WASTE: • Genotoxic waste is highly hazardous and may have; □Mutagenic, □Teratogenic, or □Carcinogenic properties.

• It raises serious safety problems, both inside hospitals and after disposal, and should be given special attention. • It includes certain cytostatic drugs, vomit, urine, or feces from patients treated with cytostatic drugs, chemicals, and radioactive material.

6. CHEMICAL WASTE: It consists of discarded □Solid, □Liquid, and □Gaseous chemicals

Chemical waste may be hazardous or nonhazardous. It is considered to be hazardous if it has at least one of the following properties: □Toxic, □Corrosive (acids of pH < 2 and bases of pH> 12) □Flammable, □Reactive □Genotoxic

7. WASTES WITH HIGH CONTENT OF HEAVY METALS: It represents a subcategory of hazardous chemical waste, and is usually highly toxic. It includes □Batteries, □Broken thermometer, □Blood-pressure gauges.

8. PRESSURIZED CONTAINERS: Many types of gas are used in health care, and are often stored in pressurized cylinders, cartridges, and aerosol cans. Most

common gases used in health care includes: □Anesthetic gases □Ethylene oxide □Oxygen □Compressed air

9. RADIOACTIVE WASTE: It includes the X- rays, α- and β- particles, and γ- rays emitted by radioactive substances. • α-particles, are heavy positively charged, and include protons and neutrons. • They have low penetration power, and are hazardous to humans mostly when inhaled or ingested.

• β- Particles, are negatively or positively charged electrons with significant ability to penetrate human skin, they affect health through ionization of intracellular proteins and proteinaceous components. • γ- Rays, are electromagnetic radiations similar to X- rays but to shorter wavelength. Their penetrating power is high and lead shielding is required to reduce their intensity.

5. SOURCES OF BIOMEDICAL WASTE: • It is generated primarily from health care establishments, including • Hospitals, • Nursing homes, • Veterinary hospitals, • Clinics and general practitioners, • Dispensaries, • Blood blanks, • Animal houses and research institute.

OTHER SOURCES:

1. Households: The domestic sector generates biomedical waste to a small extent which is less than about 0.5% of the total waste generated in a household. The type of biomedical waste generated in a household are syringes, cotton swabs, discarded medicines, bandages, plaster, sanitary napkins, diapers etc.

INDUSTRIES, EDUCATION INSTITUTES AND RESEARCH CENTERS: These also generate bio- medical waste in substantial quantities.

The type of waste generated from an animal houses is typically animal tissues, organs, body parts, carcasses, body fluids, blood etc., of experimental animals.

3. BLOOD BANKS AND CLINICAL LABORATORIES: Blood banks and laboratories generate most of the categories of biomedical waste.

4.HEALTH CARE ESTABLISHMENTS:

The sources of bio-medical waste generated in health care setting.

6. EFFECTS OF BIOMEDICAL WASTE: - The improper management of biomedical waste causes serious environmental problems in terms of □Air, Water and Land pollution.

1. AIR POLLUTION: • Air pollution can be caused in both indoors and outdoors.
2. • Biomedical waste that generates air pollution is of three types- • Biological, • Chemical and • Radioactive.

A. Indoor air pollution:- Hospital Acquired Infections (Nosocomial infection). Indoor air pollution can caused due to:

B. • Poor ventilation • The paints, carpet, furniture, equipment's, etc., used in the rooms. • Use of chemicals, disinfectants, fumigants etc.

C. Outdoor air pollution:

D. Outdoor air pollution can be caused by pathogens. □When waste without pretreatment is being transported outside the institution, or if it is dumped openly, pathogens can enter the atmosphere i.e. drinking water, food stuff, soil etc.

WATER POLLUTION:

Biomedical waste can cause water pollution. If the waste is dumped in low-lying areas, or into lakes and water bodies, can cause severe water pollution. • Treatment or disposal option can also cause water pollution. • Water pollution can either be caused due to biological, chemicals or radioactive substances.

LAND POLLUTION:

Open dumping of biomedical waste is the greatest cause for land pollution. • Soil pollution from bio-medical waste is caused due to infectious waste, discarded medicines, chemicals.

• Heavy metals such as cadmium, lead, mercury, etc., which are present in the waste will get absorbed by plants and can then enter the food chain.

7. Methods of disposal of bio-medical waste and their segregation WASTE CATEGORY TYPE OF WASTE TREATMENT AND DISPOSAL OPTION Category No. 1 Human Anatomical Waste (Human tissues, organs, body parts) Category No. 2 Animal Waste (Animal tissues, organs, body parts, carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals and colleges, discharge from hospitals,) Category No. 3 Microbiology & Biotechnology Waste (Wastes from laboratory cultures, stocks or specimen of live microorganisms, human and animal cell cultures used in research and infectious agents from research and industrial laboratories, wastes from production of biological, toxins and devices used for transfer of cultures) Local autoclaving/ microwaving / incineration@

Category No. 4 Waste Sharps (Needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)

Category No. 5 Discarded Medicine and Cytotoxic drugs (Wastes comprising of outdated, contaminated and discarded medicines) Incineration@ / destruction and drugs disposal in secured landfills

Category No. 6 Soiled Waste (Items contaminated with body fluids including cotton, dressings, soiled plaster casts, lines, bedding and other materials contaminated with blood.) Incineration@ / autoclaving / microwaving

Category No. 7 Solid Waste (Waste generated from disposable items other than the waste sharps such as tubing, catheters, intravenous sets, etc.)

Category No. 8 Liquid Waste (Waste generated from the laboratory and washing, cleaning, housekeeping and disinfecting activities)

Category No.10 Chemical Waste (Chemicals used in production of biological, chemicals used in disinfecting, as insecticides, etc.)

STEPS IN THE MANAGEMENT OF BIOMEDICAL WASTE:- Survey of waste generated. Segregation of hospital waste. Collection & Categorization of waste. Storage of waste (Not beyond 48 hrs.) Transportation of waste. Treatment of waste.

8. COLOR CODING FOR SEGREGATION OF BIOMEDICAL WASTE: -

COLOR WASTE TREATMENT

Yellow - Human & Animal anatomical waste / Micro-biology waste and soiled cotton/dressings/linen/beddings etc. Incineration / Deep burial

Red - Tubing's, Catheters, IV sets. Autoclaving / Microwaving / Chemical treatment

Blue / White - Waste sharps (Needles, Syringes, Scalpels, blades etc.) Autoclaving / Microwaving / Chemical treatment & Destruction / Shredding

Black - Discarded medicines/cytotoxic drugs, Incineration ash, Chemical waste. Disposal in secured landfill

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

DEPARTMENT OF BIOCHEMISTRY (2018-2019) (VAC -2)

S.No	Register No.	Student List	Signature
1	U18MB352	RAJU .S	
2	U18MB361	SANJEEV KUMAR G.S	
3	U18MB359	SAIPURNNIMA R.K	
4	U18MB363	SAURABH SINGH	
5	U18MB358	SAI SRI MUTYALA	
6	U18MB366	SHASHANK RITU RAJ	
7	U18MB368	SHLOKA SHAW	
8	U18MB354	RIDDHI RAJESH PRASAD	
9	U18MB367	SHEETAL SHRIVASTAVA	
10	U18MB371	SHREYASEE CHATTOPADHYAY	
11	U18MB374	SONALI HESSA	
12	U18MB355	ROHINI V	
13	U18MB369	SHRABASTI CHATTOPADHYAY	
14	U18MB372	SHRI KIRTI RAAJA	
15	U18MB360	SAMIKSHA DUBEY	
16	U18MB375	SOUMITRA MOHANTY	
17	U18MB373	SNEKA SE	
18	U18MB356	S.R.HEENA FEEMISHNEE	
19	U18MB370	SHREYA GUMBER	
20	U18MB357	SABARISH K S	

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute of Medical Sciences

INTRODUCTION:

Annexure- I

BIO-MEDICAL WASTE MANAGEMENT

1. WASTES Wastes Solid waste Household waste Industrial waste Biomedical waste or hospital waste Liquid Waste Gaseous Waste WASTES "Something which is not put into proper usage at a given time".
2. BIO-MEDICAL WASTE: - Any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological.
3. Improper:- □Packaging □Segregation □Treatment and disposal of biomedical waste. CAUSES
4. CLASSIFICATION OF BIOMEDICAL WASTE:

   1. INFECTIOUS WASTE: Infectious waste suspected to contain pathogens (bacteria, viruses, parasites, or fungi) in sufficient quantity to cause diseases in susceptible hosts.

   This category includes:- • Cultures and stocks of infectious agents from laboratory work. • Waste from surgery on patients with infectious disease. • Infected animals from laboratories.

   2.PATHOLOGICAL WASTE: It consists of tissues, organs, body parts, human fetuses, and animal carcasses, blood, and body fluids.

SRI LAKSHMI NARAYANA INSTITITE OF MEDICAL SCIECNES

QULITY CONTROL IN CLINICAL LABBORATORY

1. Which of the following Westgard Rules primarily detect Random Error?

a.10x

b. 10x

c. 1_{3s}

d.2 of 3_{2s}

2. Given a QC procedure 12s as a Warning rule - what does that mean?

a. Reject the run whenever one value is out 2s control limits

b. Repeat the control whenever one value is out 2s control limits

c. Warning of possible problems if one value is beyond 2s control limits

d. Reject the run whenever two values are in 1s control limits

3. Which of the following Westgard Rules primarily detect Systematic Error?

a. 1_{2s}

b 2_{2s}

C.1_{3s}

d.All the above

4. "Westgard Rules" include a 1_{2s}"warning rule." When the warning rule is violated, what action do you take?

a. Repeat the control

b. Run a new control

c. Check the other "Westgard Rules"

d. Accept and run "Warning Rules"

5. What does QA and QC stand for?

a. Quality Assurance and Queuing Control

b. Quality Adjustment and Quality completion

C Quality Assurance and Quality control

D. Quality Assurance and Quality control

6. Which of the following option is not correct regarding QA and QC?

a. QA depends on the activities of the entire company

b. Process capabilities should be monitored on intermittent basis

c. Measuring equipment's must have a calibration certificate

.d. Normally many inspections are done during the process of manufacturing

7. Who is considered to be the father of Six Sigma?

(A) Bill Smith

(B) Walter Shewhart

(C) Jack Welch

(D) None of the above

8. Six Sigma strategies seek to improve the quality of the output of a process by

(A) identifying the causes of defects

(B) removing the causes of defects

(C) minimizing variability in manufacturing

(D) all of the above

9. -Six Sigma is applicable to

(A) Finance

(B) Supply chain

(C) Healthcare

(D) All of the above

10. The concept of Six Sigma was developed by the following company.

(A) General Electric

(B) Motorola

(C) Honeywell

(D) DuPont

SRI LAKSHMI NARAYANA INSTITITE OF MEDICAL SCIECNES

QULITY CONTROL IN CLINICAL LABBORATORY

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(B) removing the causes of defects

(C) minimizing variability in manufacturing

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(A) Finance

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(C) Healthcare

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10. The concept of Six Sigma was developed by the following company.

(A) General Electric

(B) Motorola

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(D) DuPont

Annexure- V

Course feedback form

Course title: Date :

Course code:

Department: BIOCHEMISTRY

S.no	Design of the course	1	2	3	4	5
1	The objective of the course clear to you	✓				
2	The course contents met with your expectations			✓		
3	The lecture sequence were well planned		✓			
4	The lectures were clear and easy to understand	✓				
5	The audiovisual teaching aids were effectively used		✓			
6	The instructor's encouraged interaction and was it helpful	✓				
7	The contents were illustrated with examples		✓			
8	Overall Rating of the course		✓			

*** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory**

Suggestions if any:

– Satisfactory –

Signature

Date: 09.01.2020

From

Dr. Pannerselvam
Professor and Head,
Department of Microbiology,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To

The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course:

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **Quality control in clinical laboratory** We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr. Jansi Rani

Encl: Certificates

Photographs

Annexure- V

Course feedback form

Course title: Date :

Course code:

Department: BIOCHEMISTRY

S.no	Design of the course	1	2	3	4	5
1	The objective of the course clear to you		✓			
2	The course contents met with your expectations	✓	.			
3	The lecture sequence were well planned	✓	✓			
4	The lectures were clear and easy to understand		✓			
5	The audiovisual teaching aids were effectively used		✓			
6	The instructor's encouraged interaction and was it helpful		✓			
7	The contents were illustrated with examples	✓				
8	Overall Rating of the course		✓			

*** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory**

Suggestions if any:

– Good –

Signature

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that SHLOKA SHAW has actively participated in the Value Added Course on **QUALITY CONTROL IN CLINICAL LABORATORY** April– May 2018 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Kajalakshmy

RESOURCE PERSON

Dr. Jansi Rani

COORDINATOR

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that SONALI HESSA has actively participated in the Value Added Course on **QUALITY CONTROL IN CLINICAL LABORATORY** April – May 2018 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Kajalakshmy

RESOURCE PERSON

DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY - 605 502.

Dr. Jansi Rani

COORDINATOR

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSSUDU AGARAM VILLAGE; KUDAPAKKAM POST,PONDICHERRY - 605003

Date 1.10.2019

From
Dr. PAMMY SINHA ,
HOD
Pathology
SriLakshmiNarayanaInstituteofMedicalSciences,Puducherry
Bharath Institute of Higher Education and Research,
Chennai.

To
The Dean,
SriLakshmiNarayanaInstituteofMedicalSciences,Puducherry
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Automation in hematology

Dear madam,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: Automation in hematology on November 2019–Januuary 2020. We solicit your kind permission for the same.

Kind Regard

Dr. PAMMY SINHA

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: Dr.G. JAYALAKSHMI

The HOD: Dr. PAMMY SINHA

The Expert: Dr. V.SARAVANAKUMARI

The committee has discussed about the course and is approved.

Dean
(Sign &Seal)

Subject Expert
(Sign &Seal)

HOD
(Sign &Seal)

Dr. G. JAYALAKSHMI, BSC.,MBBS.,DTCD.,M
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
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