

S.R.R&C.V.R Govt. Degree College

DEPARTMENT OF BIOCHEMISTRY

**MEDICAL LAB TECHNOLOGY
CERTIFICATE COURSE**

YEAR 2018-19



OPEN TO ALL PROGRAMS



S.R.R.&C.V.R Govt. Degree College (A), Vijayawada



Department of Biochemistry
Medical Lab Technology (MLT)

To vocationalise education at the first-degree level, parallel utility-oriented certificate/diploma/advanced diploma courses have been introduced by UGC as Career Orientation Program (COP). The students can avail of these career-oriented courses and gain an extra qualification on graduating.

According to the University Grants Commission (UGC) regulations, a subject course that an institution proposes will be introduced in the existing three-degree programme by way of add-on skill-oriented subjects during the first, second and third year of education as **certificate/diploma/advanced diploma** courses, along with conventional degree programmes.

The certificate course in **medical lab technology** is add-on short-term specialization course of 6 months introduced by Department of biochemistry in 2005. This course trains a learner to help a doctor diagnose, detect, and treat diseases by collecting and testing samples and documenting the results of these tests for further analysis by the doctor.

Under the programme, each student would be awarded an additional certificate /diploma /advanced diploma in the 'add-on' course opted for. Students applying for college admissions after Class XII are also eligible to join the add-on/career-oriented courses, along with BA/ B.Com/ B.Sc./ (I, III and V semester), depending on the availability of seats in colleges which offer these courses.

Students who have passed the certificate course will be eligible for admission to the respective diploma course and those who passed diploma course are eligible for admission into advanced diploma in a progressive manner. This allows a student studying graduation to up skill and certifies them.

The **demand for certified MLTs** is growing with the rise in the number of hospitals and laboratories, which has been further stressed upon by the COVID-19 crisis. Completion of a **certificate course in MLT** allows a professional to work as a **phlebotomist** and can work as assistant to a medical professional.



S.R.R&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



COURSE DETAILSS

SALIENT FEATURES

Course duration: 6 Months, 15th September to 15th March

(CMLT-6 Months, DMLT-6 Months, ADMLT-6 Months)

CMLT-Certificate Course in Medical Lab Technology

DMLT-Diploma in Medical Lab Technology

ADMLT- Advanced Diploma in Medical Lab Technology

Eligibility: 10+2 Science

Objective: Develop a pool of trained workforce, who can be employed by a diagnostic service provider to assist pathologist and microbiologists

Medium of Instruction: English

Attendance: 75% attendance is required to appear in the final examination.

Course credits- 2+4, Theory- 2, Practical-4, each credit has 12 hours of duration.

Theory- 36 hours, Practical- 60 hours.

Note: At the time of SEM end examinations the regular classes are conducted on Sundays & Holidays

Marks : Theory- 40 Marks, Practical 60 Marks

Grading system: Above 70% marks both in theory and practical A grade

60% to 69% B grade

50% to 59% C grade

35% to 49% D grade

Certificate award:

Certificate in medical lab technology is awarded to the candidates who successfully complete the requirements as prescribed by the Governing body, S.R.R&C.V.R GDC (A), Vijayawada.



S.R.R&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



Objectives:

The course aims to produce middle level medical laboratory technology personnel with sound academic knowledge equipped with perfect technical skills and can face real life situation at the level they are aimed at. Interpret the results and explain underlying principles in each investigation. Prepare reagents required for routine and special investigations. Set up clinical laboratory in primary health center

They can explore a wide field of opportunity right after completion of their course of Medical Laboratory Technology. Clinical laboratory training plays a crucial role in the detection, diagnosis and treatment of disease. Medical laboratory technicians are trained to work under the supervision of a technologist to conduct routine diagnostic tests, as well as set up, clean and maintain medical laboratory equipment. They have careers at private hospitals, nursing homes and diagnostic centers..

Career Opportunity/Course outcome: Certificate in Medical Laboratory Technology program creates and fosters skilled health professionals in clinical laboratory science for diagnosis of diseases. Medical Laboratory Technology is generally concerned with diagnosis, treatment and prevention with use of pathological tests. As vital members of the health care team, Lab Technicians play a key role in collecting information to provide best care to the patients. Students who enroll for this program will be provided theoretical as well as practical knowledge of different clinical laboratory techniques



S.R.R.&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



From
Sri R. H. Dikshatulu., M.A.,
Principal (FAC),
S.R.R. & C.V.R. Govt. Degree College,
Vijayawada - 520004.

To
The Controller Of Examinations,
Acharya Nagarjuna University,
Nagarjuna Nagar - 522510.

Lr Rc No 2/UGC Section /2003 / dated 23-11-2005

Sir

Sub:- S.R.R.&C.V.R.Govt. Degree College, Vijayawada – UGC Certificate
Course's – schedule of proposed University Examinations - Reg.
Ref:- Telephone call from Sri.T. Pamulu, Additional Controller of
Examinations, ANU on 22-11-2005.

With reference to your telephone message on 22-11-2005, with the Principal, SRR & CVR Govt. Degree College, Vijayawada, I would like to represent the following few lines for your ready reference on the subject stated above.

(i) The UGC stipulated hours for each certificate course viz,

(a) Medical Diagnostics

(b) Herbal Medicinal Plants. &

(c) Mushroom Cultivation

are 30 credits. Each credit has 15 hours of duration i.e., 450 hours (300 hrs for theory + 150 hrs for practical classes). As such, we need 6 months time i.e., from 15th SEP'05 to 15th MAR'06 for completion of both the theory and practical classes of each course.

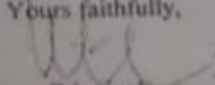
(ii) It is recommended and proposed that the schedule of University Examinations for the above Certificate courses be commenced from 20th April, 2006.

(iii) As we contacted Sri S.R.K. Prasad, the Principal, JKC College, Guntur who framed the Syllabi for the above certificate courses, we came to know that he had already submitted the Model question papers for each course to the Academic Section (Registrar's Office) of Acharya Nagarjuna University along with the syllabus.

While enclosing here with a copy of UGC Orders relating to these courses for your kind information and perusal, I request you to take necessary further action in the matter of ensuing examinations for the above certificate courses.

Encls:
As said above.

Yours faithfully,


Principal
SRR & CVR Govt. Degree College,
Vijayawada.



S.R.R&C.V.R Govt. Degree College (A), Vijayawada

Department of Biochemistry

MEDICAL LAB TECHNOLOGY COURSE SYLLABUS



(COPMLT01)

CMLT (Certificate in Medical Lab Technology)

Unit – I

Introduction to Microbiology

Contributions of Anton von leewenhock, Louis Pasteur, Robert Koch and Joseph Lister

Classification of medically important micro organisms – Virus, Bacteria and Fungi

Unit – II

Microbial Techniques

Microscopy types- simple, compound, bright field, dark field, phase contrast and fluorescent microscope

Principles, operation and applications of centrifuge, calorimeter, spectrophotometer

Unit – III

Types of media

Basal media-Nutrient broth, Glucose broth, Selective media, Enriched media, Anaerobic media

Sterilization and Disinfection

Unit-IV

Biomolecules:

Classification, properties and functions of carbohydrates, amino acids, proteins, lipids and Nucleic acids.

Basic concepts of Enzymes: Definition, classification of enzymes of diagnostic importance

Unit-V

Metabolism:

Basic concepts of carbohydrate metabolism – Digestion, absorption, metabolism, regulation of blood sugar (Glycolysis, TCA cycle, Glycogenesis, Glycogenolysis)

Basic concepts of proteins – Digestion, absorption of proteins, urea formation, creatinine

Basic concepts of lipids metabolism – Digestion and absorption of lipids, ketone body formation.



S.R.R&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



(COPMLT01)

CAREER ORIENTED PROGRAMME (COP)

CMLT (Certificate in Medical Lab Technology)

Total marks: 40

Hours: 2h

SECTION A (6 X 4= 24 marks)

Short Answer Type Questions, Answer any SIX Questions.

1. Pasteur effect
2. Light microscope
3. Bacterial growth curve
4. Lipids
5. Centrifuge
6. Urea cycle
7. Clinical pathology
8. Haemoglobin
9. Virus
10. Blood transfusion

SECTION B (2×8= 16 marks)

Long answer type questions, Answer any two questions

11. Give an account on different methods of Sterilization.
12. Describe the principle, and applications of colorimeter.
13. Give an account on digestion of carbohydrates, proteins and fats
14. Write in detail about different types of media used for cultivation of bacteria
15. Discuss about any two medically important fungi



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Department of Biochemistry
(COPMLT02)



DMLT (Diploma in Medical Lab Technology)

UNIT – I

Bacteriology

Morphology, cultural characteristics, lab diagnostics of important pathogens

Gram -ve cocci- Neisseria (gonococcus)

Gram -ve bacilli - Coryne bacterium diptheriae, Mycobacterium tuberculosis, Mycobacterium leprae, Clostridium tetani, clostridium botulieum,

Gram +ve bacilli - Escherichia coli, Klebsiella, Salmonella, Vibrio cholerae,

Spirochaets -Treponenna pallidum

Virology

Classification, Generala properties, Cultivation of important pathogenic virus such as Measles, Mumps, Polio, Hepatitis, Rubella, HIV and influenza.

UNIT-2

Mycology

Study of medically imp Human mycoses- Dermatophytoses (Ringworm infections), Candidiasis, Aspergillosis.

Parasitology

Parasites in blood –Plasmodium species

Parasites in stool – Entamoeba histolytica

Parasites in Urine – Trichomonas vaginalis

UNIT III

Immunology and serology

Introduction, Antigens and Antibodies

Different types of Antigen and Antibody reactions, Agglutination, Precipitation, Complement fixation and Neutralization, Principle and method of ELISA test



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UNIT IV

Pathology and Hematology

Sputum examination, Semen analysis

Collection of blood, Coagulation of blood, Anticoagulants; Erythrocyte Sedimentation Rate

Blood cell count, Absolute eosinophil count; Coagulation tests



S.R.R.&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry
(COPMLT02)



CAREER ORIENTED PROGRAMME (COP)

DMLT (Diploma in Medical Lab Technology)

Total marks: 40

Hours: 2h

Short Answer Type Questions, Answer any SIX Questions.

(6 X 5 = 30 M)

1. Mycobacterium tuberculosis
2. Poliovirus
3. Candidiasis
4. Flatworms
5. Measles
6. Agglutination
7. Anticoagulants
8. Anemia
9. Ascaris lumbricoides
10. Collection of blood

SECTION B (4 X10 = 40 marks)

11. Describe the morphology and cultural characteristics of any two important pathogens.
12. Discuss about HIV virus
13. Write about morphology, life cycle, and lab diagnosis of plasmodium species.
14. Write about blood composition and functions.
15. Discuss about the Principle and applications of ELISA



S.R.R&C.V.R Govt. Degree College (A), Vijayawada

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COPMLT03

ADMLT (Advanced Diploma In Medical Lab Technology)



UNIT-I

General principles of diagnostics

Microbiology-collection, transport and processing of clinical samples

General methods of laboratory diagnosis- cultural, biochemical serological and molecular methods

UNIT- II

Hematology & Biochemistry

Hemoglobin, Anemia, Leukemia

Blood banking – storage and processing of blood bags

Hypersensitivity, Autoimmune diseases

Basic concepts of Liver function tests, Total serum bilirubin, Vandenberg Test

Basic concepts of Kidney function tests

Blood Urea, Serum creatinine

UNIT- III

Histopathology

Materials and equipment used for Biopsy and Autopsy

Collection, preservation and labelling of samples

Fixation, processing of tissues, embedding, section cutting, staining and mounting, special stains

UNIT –IV

Anatomy-1

Digestive system

Respiratory system

Cardiovascular system

Urinary system



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Unit –V

Anatomy-2

Reproductive system

Endocrine system

Nervous system

(COPMLT03)

CAREER ORIENTED PROGRAMME (COP)

ADMLT (Advanced Diploma in Medical Lab Technology)

Total marks: 40

Hours: 2h

Short Answer Type Questions, Answer any SIX Questions.

(6 X 5 = 30 M)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

SECTION B (4 X10 = 40 marks)

- 11..
- 12.
13. .
- 14.
- 15.



MEDICAL LAB TECHNOLOGY

YEAR 2018-2019

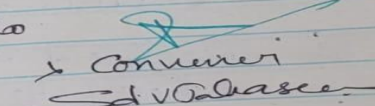
RESOLUTIONS IN MINUTES REGISTER

Academic year - 2018-19 17/09/18

The COP (Career Orientation programme) Committee met in the principal's chamber on 17/09/18 and the following resolutions are taken.

- ① It is resolved to start UGC sponsored Medical Lab technology courses for the academic year 2018-19 from the 15th of September 2018.
- ② These 3 year (6 months per each year duration) courses are offered to degree studying students of all the degree colleges in Vijayawada city and nearby the city.
- ③ As per the UGC guidelines the strength of the students is fixed with minimum of 10 and maximum of 40.
- ④ It is resolved to continue previous fee structure i.e 1500/- for each 6 months course and also resolved to collect the fee on installment basis for the convenience of economically poor students.
- ⑤ Resolved to appoint Smt. P. Swathi Btech Biotechnology, PG diploma in clinical research & pharmaceuticals, as resource person to teach CMLT, DMLT & ADMLT and Raja Rao as Lab assistant.
- ⑥ Resolved to spend 5000/- rupees as monthly salary to resource person P Swathi gowd and 1000/- to Lab assistant Raja Rao.


PRINCIPAL
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
Machavaram, VIJAYAWADA - 520 004.


Convener
Sd V. Vasu



S.R.R&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



Enrolled list of students with marks achieved

CERTIFICATE COURSE IN

2018 - 2019

60

MEDICAL LAB TECHNOLOGY

61

S.No	Reg No	Name of the Student	Theory	Practical	Grade	Total	Signature with date
	Y18MLT174001	Annamsetti Subrahmanyam	39	22	B	61	A. Subrahmanyam
	M8MLT174002	Anumalasetty Lekhya Srilakshmi	42	29	A	71	
		Vasanth					
	03	Boliseti Teja Naga Sai	38	28	B	66	B. Teja naga sai
	04	Budiputi Haritha	29	25	C	54	
	05	Burugu Viswas	42	29	A	71	
	06	Chagantipati Harish	30	23	C	53	
	07	Gogulamudi Surya Prakash	48	29	A	77	G. Surya Prakash
	08	Gondesi Saikrishna Srilatha	25	29	C	54	G. S. Srilatha
	09	Gummapu Rohit Nanda	28	23	C	51	G. Rohit nanda
	10	Gunturu Bhanu Durga Prasad	36	26	B	62	
	11	Guruvelli Neeraja	28	29	C	57	
	12	Kakumanu Sebasteen	48	30	A	78	K. Sebasteen
	13	Kanchapogu Sachitha	50	30	A	80	
	14	Kesarapalli Pavani	34	27	B	61	K. Pavani
	15	Kodali Harshitha	42	28	A	70	
	16	Maganti Gayathri	48	30	A	78	M. Gayathri
	17	Marikanti Karun Kumar	19	26	F	45	
	18	Masimukkala Prasanth	38	25	B	62	
	19	Matta Naveen	46	25	A	71	M. Naveen
	20	Miriyala Vyshnavi	37	27	B	64	M. Vyshnavi
	21	Mohammed Mehidi Hussain	37	25	B	62	
	22	Moka Lokesh	38	24	B	62	
	23	Mopidevi Sowmya	42	29	A	71	M. Sowmya
	24	Mudavath Vamsi Naik	27	26	C	53	
	25	Munipalli Ravi Teja	27	24	C	51	
	26	Nakka Abhigna	46	27	A	73	
	27	Nakka Srinivasulu	28	22	C	50	
	28	Patthureddypalli Govardhan	30	24	C	54	P. Govardhan
	29	Periseti Revanth	36	26	B	62	
	30	Potluru Robini	28	22	C	50	

62						
S.No	Reg No	Name of the student	Theory	Practical	Grade	Total
	Y18MLT174031	Puppala Lalitha	31	29	B	60
	32	Puppala Lavanya	41	28	B	69
	33	Sanam Keerthi	43	28	A	71
	34	Thota Venkata Saikrishna Manikata	30	24	C	54
	35	Vankadavath Srinu Naik	32	24	C	56
	36	Yallamanti Pravallika	40	30	A	70
	37	Yerra Surendra	30	25	C	55

63						
						Signature with date
						P. Lavanya 28-10-24
						S. Keerthi
						V. Srinu Naik
						Y. Pravallika



S.R.R & C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



DIPLOMA IN MEDICAL LAB TECHNOLOGY						
64	2018-19					
S.No	Reg. No	Name of the Student	Theory	Practical	Grade	Total
						Signature with date
	Y11MLT174001	Marthana Ratna Kumari	40	30		70
	02	Mungada Tulasi Surya Sindhu	38	27		65
	03	Nakka Meghana	34	28		62
	05	Genaguntla Mani	24	28		52
	06	Darelli Manasa	44	27		71
	07	Palle Lavanya	36	27		63
	08	Pari Aruna Kumari	33	27		60
	09	Dussa Sai Sree	41	28		69
	10	Nagulavancha Anusha	31	26		57
	11	Batiraju Kasi Viswanadh	30	27		57
	13	Kodidala Sravan Kumar	28	26		54
	14	Gaddam Mansy Kumar	30	26		56
	15	Palapongu Narendra	42	26		68
	16	Kundeti Lakshmi Prasanna	A	A		A
	18	Annamsetti Subrahmanyam	34	26		60
	22	Chukkala Bhargavi	33	28		61
	23	Chinthala Swapna Kumari	34	30		64
	24	P. Naga Thirupothamma	42	27		69
	26	Anureu Pravara Chandu	30	26		56
	27	Gogulamudi Nagalakshmi	38	28		66
	28	Maddirala Sai Usha Sree	44	29		73
	Y16MLT174005	Avanigadda Syam sarath	56	29		85
	Y16MLT174026	Tellakula Yesaswini Sri Sai	48	28		76
		Buyji				
						Total - 23
						Absent - 1



S.R.R&C.V.R Govt. Degree College (A), Vijayawada
Department of Biochemistry



ADVANCE DIPLOMA IN MEDICAL LAB TECHNOLOGY						
2018 - 2019						
No	Reg.No	Name of the student	Theory	Practical	Grade	Total
	Y16CMLT174001	Abdul Nazim	44	30		74
	02	Addanki Raja Kumari	36	24		60
	03	Alapati Sri Venkatamanikanta	34	26		60
	04	Aragada Raghunatha Reddy	28	25		53
	05	Aravindgadda Syam Sarath	45	30		75
	06	Chinta Vani	33	24		57
	09	Gangolu Suneena	36	26		62
	11	Kanuru Vishwanathray	44	25		69
	12	Kasturi Naga Venkata Laksh	42	27		69
	15	Kokkiri Bhavani	34	26		60
	16	Kundeti Vijay Kumar				75
	17	Lukka Lalitha Bhargavi	45	30		74
	20	Mohammad Shahid Ali	44	30		69
	21	Muppirisetty Chaitanya Hanish	34	25		
	22	Padagala Jayalakshmi				65
	23	Ravirala Durga Rajeswari	44	21		
	24	Sambani Raja Rajeswari				69
	25	Shaik Alem				54
	26	Tellakula Yesaswini Sri Sai Bujji	46	23		69
	27	Tenti Ramani Sai Sireesha	28	26		54
	28	Usha Rabina	42	23		65
	29	Valluri Lakshmi Narayana				71
	31	Kunda Sathvik Maharshi	41	30		54
	32	Erukonda Kranthi Kumar	32	22		
						Total (34)
						Absent (2)

REPORT FOR THE YEAR 2018-19

S.NO	COURSE	NUMBER OF STUDENTS ENROLLED	NUMBER OF STUDENTS ABSENT	NUMBER OF STUDENTS PASSED	PASS PERCENTAGE
1	CMLT	37	NIL	37	100
2	DMLT	23	01	22	
3	ADMLT	24	05	19	
		84	06	78	



KRISHNA UNIVERSITY

MACHILIPATNAM - 521 001, Krishna District, Andhra Pradesh, India

001406

U.G.C. Sponsored
Career Oriented Programmes

MEMORANDUM OF MARKS

(0006)

APRIL-2019

03/12/2019

Name : CHAGANTIPATI HARISH

Reg. No.: Y18MLT174006

Course : Certificate Course In MEDICAL LAB TECHNOLOGY/MEDICAL
DIAGNOSTICS

College : S.R.R. & C.V.R. GOVT. COLLEGE
VIJAYAWADA

S.No.	Subject	Maximum Marks	Minimum Marks	Marks Secured
1.	Theory : MEDICAL LAB TECHNOLOGY/ MEDICAL DIAGNOSTICS	70	23	30
2.	Practical : MEDICAL LAB TECHNOLOGY/ MEDICAL DIAGNOSTICS	30	12	23
Total Marks		100	35	53
Result :		Pass	Grade :	C

PRINCIPAL
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
Machavaram, VIJAYAWADA - 520 004.

Principal

Controller of Examinations

Grades : Above 70% - 'A', 60% - 69% - 'B', 50% - 59% - 'C', 35% - 49% - 'D'

Course Duration : Certificate - One year : 30 credits or 450 hours ; Diploma - Two years : 60 credits or 900 hours ;
Advanced Diploma - Three years : 90 credits or 1350 hours.



KRISHNA UNIVERSITY

001529

MACHILIPATNAM - 521 001, Krishna District, Andhra Pradesh, India

**U.G.C. Sponsored
Career Oriented Programmes**

MEMORANDUM OF MARKS

(0042)

October-2020

06/02/2021

Name : ANUMALASETTY LEKHYA SRILAKSHMI VASANTHA

Reg. No.: Y18MLT174002

Course : DIPLOMA IN MEDICAL LAB TECHNOLOGY

College : S. R. R. & C. V. R. GOVT. COLLEGE
VIJAYAWADA

S.No.	Subject	Maximum Marks	Minimum Marks	Marks Secured
1.	Theory : MEDICAL LAB TECHNOLOGY	70	23	35
2.	Practical : MEDICAL LAB TECHNOLOGY	30	12	28
Total Marks		100	35	63
Result :		Pass	Grade :	B

Principal (FAC)

SRR & CVR GOVT. DEGREE COLLEGE

(Autonomous)

Controller of Examinations

Machilipatnam, VIJAYAWADA-521 001

Grades : Above 70% - 'A', 60% - 69% - 'B', 50% - 59% - 'C', 35% - 49% - 'D'

Course Duration : Certificate - One year : 30 credits or 450 hours ; Diploma - Two years : 60 credits or 900 hours ;

Advanced Diploma - Three years : 90 credits or 1350 hours.