

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

DEPARTMENT OF BIOCHEMISTRY

**MEDICAL LAB TECHNOLOGY
CERTIFICATE COURSE**

YEAR 2017-18



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 Carrier 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. B. 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
Courses – 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.

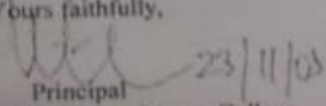
(ii) It is recommended and proposed that the schedule of University Examinations for the above
Certificate courses be commenced from 20th April, 2006.

(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 leewenhook, 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



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

Department of Biochemistry

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 2017-2018

RESOLUTIONS IN MINUTES REGISTER

Academic year - 2017-18 14/09/17

The Cop courses Committee Met in the principal chamber on 14/9/2017 and the following resolutions are taken

- ① It is resolved to restart UGC sponsored Medical Lab technology courses for the academic year 2017-18 from the month of October that is on 3/10/2017.
- ② These 3 year (6 Months) duration courses are offered to degree studying students of all colleges in Vijayawada City and near by the city
- ③ As per the UGC guidelines the strength of the students is fixed with minimum (Ten) 10 and maximum 40 (Forty)
- ④ It is resolved to continue previous fee structure i.e 1500/- for each course and also resolved to collect the fee on instalment basis for the convenience of economically poor students
- ⑤ Resolved to appoint Smt. Darcas Anand M.Sc, B.Ed, English, Anjali M.Sc as resource persons and resolved to continue the previous remuneration of 4000/- to Smt. C. Darcas Anand and 2000/- to Anjali and 500/- to clerical work to be appointed.

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

Convenor
S. V. Chasen



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



Enrolled list of students with marks achieved

CERTIFICATE COURSE IN MEDICAL DIAGNOSTICS
2017-2018
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Reg No	Name of the student	Theory	Practical	Grade	Total	Signature with date
Y16MLT174001	M. Ratna Kumari	41	29	A	70	
02	M.T.S. Sundhi	33	26	C	59	
03	N. Meghana	41	27	B	68	N. Meghana 19/01/2019
04	A. Jyothika	41	28	B	69	
05	G. Mani	35	24	C	59	
06	D. Manasa	33	28	B	61	
07	P. Lavanya	35	25	B	60	
08	P. Aruna Kumari	31	25	C	56	
09	D. Sai Sree	37	25	B	62	D. Vasudha
10	N. Anusha	36	25	B	61	
11	B. Kavi Viswanath	36	24	B	60	
12	SK. Arshad	— AB —				
13	K. Sravan Kumar	36	27	B	63	K. Sravan Kumar
14	G. Manoj Kumar	38	25	B	63	G. Manoj Kumar 8/1/19
15	P. Narindra	46	28	A	74	P. Narindra 14/09/18
16	K. Lakshmi Prasanna	45	28	A	73	
17	P. Siva Sai Jyothi	32	25	C	57	
18	A. Subrahmanyan	— AB —				
19	M. Gopi Chandana	36	28	B	64	
20	K. Shamitha	37	28	B	65	
21	D. Renuka	40	28	B	68	
22	C. Bhargavi	50	28	A	78	
23	C. Swapna Kumari	48	27	A	75	M. Ishwara Ch. Swapna Kumari
24	Naga Hirupakshamma	39	25	B	64	
25	A. Pravan Chandra	32	24	C	56	
26	G. Nagalakshmi	28	23	C	51	
27	M. Sai Usha Sree	46	29	A	75	M. Ushasree
Y16MLT174033	F. Krunthi Kinnar	39	27	B	66	



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

Department of Biochemistry



DIPLOMA IN MEDICAL LAB TECHNOLOGY
2016-2017-18

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No.	Regd No	Name of the Student	Theory	Grade	Practical	Total	Signature with date
	Y16MLT174001	Abdul Nazma	49	A	27	76	
		A. Raja Kumari	31	C	25	56	A. Raji Kumar
		A.S.V. Manikanta	32	C	25	57	
		A. Paghunadha Reddy	32	B	28	60	A. Ka
		A. Syam Sarath		AB			
		Ch. Vani	46	A	25	71	P. S. V. Rao 11/12/2021
		E. Varani	47	A	25	72	
	Y16MLT174009	G. Sunana	54	A	27	81	G. Sunana 2/1/18
		G. Trivikrama Rao		AB			
10		G. Sravani	46	A	25	71	K. Vishwanathay
		K. Vinayakthry	54	A	28	82	K.N.V. Lakshmi
		K. Nagavenkata Laksh					
		K. Akankata Subba Rao		AB			
14		Koti Vijay Kumar	48	A	28	76	K. Bhavani
		K. Bhavani	35	C	24	59	
		K. Vijay Kumar	54	A	28	82	
		L. Lalitha Borgavi		AB			
		M. Srikanth	48	A	29	77	
20		Md. Shalid Ali	41	B	28	69	
19		M. Durga Prasad	48	A	27	75	M. Durga Prasad
31		M. Chaitanya Hanish	40	B	28	68	
23		R. Durga Rajeswari	41	B	25	66	
22		P. Jayalakshmi	39	B	25	64	
24		S. Raja Rajeswari	32	C	27	59	
25		Sk. Alim		AB			
26		T. Yasawini Sri Sri Sujji	50	A	24	74	T. Yasawini T. Ramani Sen
27		T. Ramani Sri Sirusha	45	A	27	72	
28		Usha Babina Modi	40	B	28	68	
29		V. Lakshmi Narayana					
30		Y. Praveetha Praveena					
31		K. Sathvik Maharshi	50	A	28	78	
	Y16MLT174033	T. Bhavani					
		E. Kranthi Kumar	36	B	27	63	



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



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ADVANCED DIPLOMA IN MEDICAL LAB TECHNOLOGY

2017-18

Regd No	Name of the student	Theory	Grade	Practical	Total	Signature with date
Y1SMLT174001	B. Renu Richal	46	A	28	74	K. Balu Ramulu
	Q. Lakha	42	A	28	70	
06	K. Babaramsu	43	A	28	71	
07	K. Leela prasad		AB			K. Bhargavi
	K. Sai kati	43	A	28	71	
	K. Bhargavi	48	A	28	76	
	K. Sunatha	41	B	27	68	K. Suresh
12	L. Nitkin	43	A	28	71	
	M. Nandhini	47	A	27	74	M. Nandini 26/10/18
	M. John Wesley	46	A	28	74	
	M. Sowani					
	N. Vinod Kumar			AB		
20	Sk. Shakila	40	B	28	68	
21	SD. Goudsiga					

REPORT FOR THE YEAR 2017-18

S.NO	COURSE	NUMBER OF STUDENTS ENROLLED	NUMBER OF STUDENTS ABSENT	NUMBER OF STUDENTS PASSED	PASS PERCENTAGE
1	CMLT	28	2	26	100
2	DMLT	29	5	24	
3	ADMLT	12	2	10	
		69	9	60	



KRISHNA UNIVERSITY

001348

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

U.G.C. Sponsored
Career Oriented Programmes

MEMORANDUM OF MARKS

(0121)

APRIL-2018

25/08/2018

Name : DAGGA RENUKA

Reg. No.: Y17MLT174021

Course : Certificate Course In MEDICAL LAB TECHNOLOGY/MEDICAL
DIOGNOSTICS

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 DIOGNOSTICS	70	23	40
2.	Practical : MEDICAL LAB TECHNOLOGY/ MEDICAL DIOGNOSTICS	30	12	28
Total Marks		100	35	68
Result :	Pass	Grade :	B	

PRINCIPAL
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
Machavaram, VIJAYAWADA-4.
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

001563

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

U.G.C. Sponsored
Career Oriented Programmes

MEMORANDUM OF MARKS

(0078)

October-2020

06/02/2021


Name : DARELLI MANASA

Reg. No.: Y17MLT174006

Course : ADVANCED 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	43
2.	Practical : MEDICAL LAB TECHNOLOGY	30	12	26
Total Marks		100	35	69
Result :	Pass	Grade :	B	


Principal (FAC)



SRR & CVR GOVT. DEGREE COLLEGE

Controller of Examinations

Grades : (Autonomous) '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

001448

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

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

MEMORANDUM OF MARKS

(0048)

APRIL-2019

03/12/2019

Name : NAGULAVANCHA ANUSHA


Reg. No.: Y17MLT174010

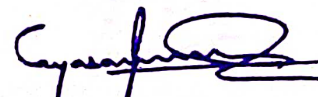
Course : DIPLOMA IN MEDICAL LAB TECHNOLOGY

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	31
2.	Practical : MEDICAL LAB TECHNOLOGY	30	12	26
Total Marks		100	35	57
Result :		Pass	Grade :	C

Principal


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


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.