



# ADITYA COLLEGE OF PHARMACY

Aditya nagar, Surampalem,  
Andhra Pradesh 533437



## A CERTIFICATE COURSE ON

## “HANDS ON TRAINING PROGRAM IN ANALYTICAL INSTRUMENTS”

**Eligibility: II B.Pharm**

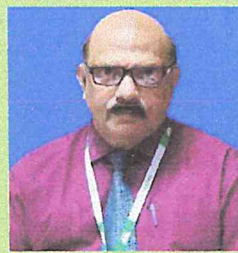
**Students who are interested to join the certificate course should contact the respective coordinator**



**Coordinator: M. Vinny Therissa**  
Asst. Professor,  
Aditya College of Pharmacy



**Resource Person: N. Divya**  
Asst. Professor,  
Aditya College of Pharmacy



**Convener: Dr. K. Ravishankar**  
Principal,  
Aditya College of Pharmacy



**Patron: Dr. N. Satish Reddy**  
Vice-Chairman,  
Aditya Educational Institutions

Timings:  
26th Dec 2020  
to  
13th Feb 2021  
(Every Saturday)



*Kanumanthi*  
**PRINCIPAL**  
Aditya College of Pharmacy  
SURAMPALEM-533 437

**All the students enrolled in this course will be provided with a certificate**



# ADITYA COLLEGE OF PHARMACY

(Affiliated to JNTUK, Approved by AICTE)



(ADITYA NAGAR, ADB ROAD, SURAMPALEM 533 437, E.G.Dt, Ph.9949876664, 08852-200005)

Website: [www.acop.edu.in](http://www.acop.edu.in), Email: [office@acop.edu.in](mailto:office@acop.edu.in)

## COURSE SYLLABUS

DURATION: 40Hrs

**Certificate course:** Hands on training program in Analytical instruments

### **Course Objectives:**

- To provide basic understanding on sophisticated instruments like UV Visible Spectrophotometer, Flourimeter, Karl Fischer Auto Titrator.
- Impart training on procedures in handling sophisticated analytical instruments and
- Training on data keeping and routine maintenance of analytical instruments.

### **Course outcomes:**

Upon successful completion, students will have the knowledge and skills to:

1. Explain the theoretical aspects of key analytical techniques and instruments
2. Undertake the correct sample preparation and characterization prior to analysis by the chosen techniques or instruments.
3. Design an analytical work-flow to acquire data and achieve the research objectives of their project.
4. Process data from the chosen instruments and demonstrate understanding of the limitations and quality of the data.

**DAY 1, 2: 26-12-2020, 02-01-2021 (12Hrs)**

### **Module 1:**

Introduction of Instrumental Analysis, Need of chemical analysis, Methods of chemical analysis, various methods of instrumental analysis and their appropriateness, some important applications.

**DAY 3, 4: 09-01-2021, 23-01-2021 (12Hrs)**

### **Module 2:**

UV-Visible Spectrophotometer, use and maintenance, sampling applications of UV-Visible spectroscopy, Instrument control: Spectra Measurement, Time Course, Fixed Wavelength, Abs/%T Monitor, Quantitative Analysis

**DAY 5 : 30-01-2021 (6Hrs)**

### **Module 3:**

Spectra Analysis: spectra view features, processing commands and data output



*xxavi chandran*  
PRINCIPAL  
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**DAY 6: 06-02-2021 (5Hrs)**

**Module 4:**

Principle of fluorescence – Measurement of fluorescence – Single beam and double beam filter fluorimeter- Ratio fluorimeter. Spectro fluorimeters.

**DAY 7: 13-02-2021 (5Hrs)**

**Module 5:**

Introduction to the use of equipment, to prepare Karl-Fischer reagents, understand water equivalence, standardise auto titrator, record reading on auto titrator, applications of auto titrator in analytical laboratory.

**References:**

1. Instrumental Methods of Chemical Analysis, Chatwal and Anand, Himalaya Publishing House.
2. UV-VIS Spectroscopy and Its Applications, Heinz-Helmut Perkampus, Springer, Berlin, Heidelberg.
3. [agilent.com/en/product/molecular-spectroscopy/fluorescence-spectroscopy/fluorescence-systems/cary-eclipse-fluorescence-spectrophotometer](http://agilent.com/en/product/molecular-spectroscopy/fluorescence-spectroscopy/fluorescence-systems/cary-eclipse-fluorescence-spectrophotometer)



*S. Anuradha*

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# ADITYA

## COLLEGE OF PHARMACY

Approved by AICTE & PCI - NEW DELHI, Affiliated to JNTUK KAKINADA  
(Formerly known as Sri Sai Aditya Institute of Pharmaceutical Sciences & Research)

Ph: 99498 76664

Email: office@acop.edu.in

Website: www.acop.edu.in

### CERTIFICATE COURSE SUMMARY 2020-21

**COURSE CODE AND NAME** : CTAI and Hands on training programme in Analytical Instruments  
**COURSE DURATION** : 40Hrs  
**BRANCH AND YEAR OFFERED:** II B.Pharmacy  
**COURSE INSTRUCTORS** : N.Divya, Assistant professor

#### COURSE OUTCOME

Students will have the knowledge and skills to:

1. Explain the theoretical aspects of key analytical techniques and instruments
2. Undertake the correct sample preparation and characterization prior to analysis by the chosen techniques or instruments.
3. Design an analytical work-flow to acquire data and achieve the research objectives of their project.
4. Process data from the chosen instruments and demonstrate understanding of the limitations and quality of the data.

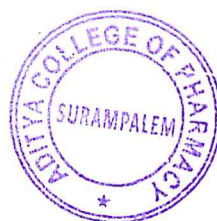
**COURSE TYPE** : Self framed course

#### ASSESSMENT MODE

**ATTENDANCE** : 40 Hours  
**NO.OF PARTICIPANTS** : 113  
**SCHEME OF EXAM** : MCQ Offline  
**DATE OF EXAM** : 15-02-2021

*M. Divya*

**Course coordinator**



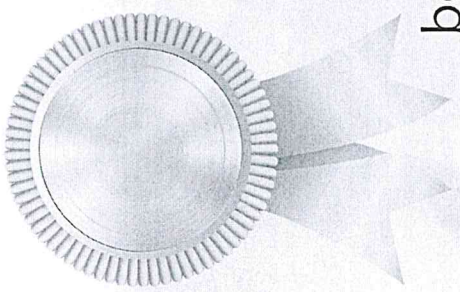
*S. Chaitanya*

**Principal**

**PRINCIPAL**  
**Aditya College of Pharmacy**  
SURAMPALAM-533 437



Scrub



# Certificate of completion

This is to certify that

Mr./Ms.

bearing roll no.

has successfully completed the certificate course entitled

“Hands on Training Program in Analytical Instruments”  
conducted in Aditya College of Pharmacy, Surampalem  
from 26th December, 2020 to 13th February, 2021

*N. Sahu Reddy*

CHAIRMAN

*N. Subash Kalyan*

VICE-CHAIRMAN

*X. Veni Sankar*

PRINCIPAL



*X. Veni Sankar*  
PRINCIPAL  
ADITYA COLLEGE OF PHARMACY  
SURAMPALEM-532137