

A.S.D GOVERNMENT DEGREE COLLEGE FOR WOMEN (A),  
KAKINADA



DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE

ON

*Chemdraw Molecular Modelling Software*

**2023-24**

*Duration : 30 Hrs*

Letter of Permission from the Principal

AD 23/02/24

From

Dr.K. Anitha

Head, Dept. of Chemistry

A.S.D. Govt. Degree College for Women (A)

Kakinada.

To

Principal

A.S.D. Govt. Degree College for Women(A)

Kakinada.

Respected Madam,

Sub: ASD GDC (W) (A), Kakinada- Department of Chemistry - Seeking permission to start a certificate course on “**Chem Draw Molecular Modeling Software**” for the students of III Semester for the Academic Year 2023-24 – Permission – Regarding.

With reference to the subject cited , I bring to your kind notice that the Department of Chemistry is offering a certificate course in “**Certificate Course in Chem Draw Molecular Modeling Software**” for the year 2023 – 24. In this Connection I request you to grant permission to start the course from 26<sup>th</sup> February 2024 to 15<sup>th</sup> June 2024 for the academic year 2023-2024.

Thanking You Madam,

Place: Kakinada

Date:

*Anitha, 23/02/2024*  
Yours faithfully  
HEAD  
DEPARTMENT OF CHEMISTRY  
A.S.D GOVT DEGREE COLLEGE  
JAGANNAICKPUR  
(Dr.K. Anitha) KAKINADA - 533 004

**Circular**

**A.S.D Government Degree College for Women (A), Kakinada**

**Department of Chemistry**



The students of III<sup>rd</sup> semester are here by informed that the Department of Chemistry is going to conduct a certificate course on “**Certificate Course in Chem Draw Molecular Modeling Software**” for 30 hours (26<sup>th</sup> February 2024 to 15<sup>th</sup> June 2024) with no entry fee. Those who are interested should enroll their names in Department of Chemistry on or before 26<sup>th</sup> February 2024.

*Archa*, 23/02/2024  
Dr. K. Archa  
DEPARTMENT OF CHEMISTRY  
A.S.D. GOVT. DEGREE COLLEGE (W)  
JAGANNAICKPUS.  
KAKINADA - 533 089

*V. N. S.*  
Principal  
PRINCIPAL  
A.S.D. GOVT. DEGREE COLLEGE (W)  
AUTONOMOUS  
KAKINADA

Circulated to the Classes

- II B.Sc Hons ( Home Science)
- II B.Sc Hons ( Maths)
- II B.Sc Hons(Zoology)
- II B.Sc Hons (Computer science)
- II B.Sc Hons( Botany)
- II B.Sc Hons(Chemistry)
- IIB.Sc Hons (Physics)

# A.S.D. GOVERNMENT DEGREE COLLEGE FOR WOMEN



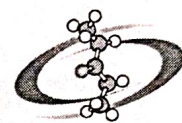
Autonomous and NAAC Re-Accredited With "B" Grade in Cycle-III  
Affiliated to Adikavi Nannaya University, Rajamahendravaram  
Kakinada-533 002, Andhra Pradesh



## Department of Chemistry

### A SKILL DEVELOPMENT CERTIFICATE COURSE ON "BASIC CHEMDRAW MOLECULAR MODELING SOFTWARE" (Chem Draw and ACD Chem Sketch)

ADMISSION NOTIFICATION 2023 - 24



Dear Chemistry Learners!

Are you interested in Drawing Chemical Structures on a computer? **Chem Draw** **ACD Chem Sketch**

Then come on! Here is an Opportunity for you.

The department of chemistry offers a certificate course on the Usage of Softwares for drawing chemical structures.



#### Course Highlights

- > This course aims at imparting skills on use of various open-source chemistry tools that are essential for any student with chemistry as a major subject.
- > At the end of course, the participants will be able to use these softwares for drawing chemical structures, generation of their names, retrieve information about physical properties calculations, three-dimensional molecular structure calculations, spectroscopic signatures chemical reaction pathways prediction, molecular functional groups and other parameters efficiently.

#### Target Group

B. Sc (First/ Second Year) with Chemistry as one of the Subjects.



Last Date for enrolment:  
26-02-2024

For Details Contact

Dr. K. Anitha

Z. Mallikarjuna Sarma

Course Coordinator

Lecturer In-Charge, Department of Chemistry, Phone No.: 9646880599

Lecturer In-Charge, Department of Chemistry

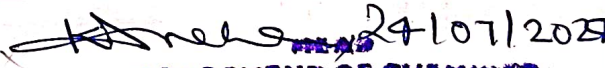

Phone No.: 8341546804, 9676822550

*Anitha*, 27/02/2024

Drawing Chemical Structures is an art of Chemistry

## Brief report on Certificate Course

Academic Year 2023-2024

Name of the Certificate Course	Certificate Course in "Chem Draw Molecular Modeling Software"
Academic Year of Course	2023-2024
Department Conducting the course	Department of Chemistry
Duration of the Course	30 Hrs
Course Code	CC23CMMS/Chem
Number of Students Completed the Course	21 Students
Brief Report	Certificate course on "Chem Draw Molecular Modeling Software" was conducted by the department of Chemistry for 30 hrs in which total 21 students were enrolled. The course was held from from 26 <sup>th</sup> February 2024 to 15 <sup>th</sup> June 2024 All the students appeared for the examination conducted on 21 <sup>st</sup> and 22 <sup>nd</sup> of July 2024 and completed the course. They have been given grades.
Number of Beneficiaries	Students : 21
Signature of the Certificate Course Coordinator	 24/07/2024 DEPARTMENT OF CHEMISTRY A.S.D. GOVT. DEGREE COLLEGE AGANNAPUR
Signature of the Principal	 PRINCIPAL A.S.D. GOVT. DEGREE COLLEGE AGANNAPUR KARNATAKA

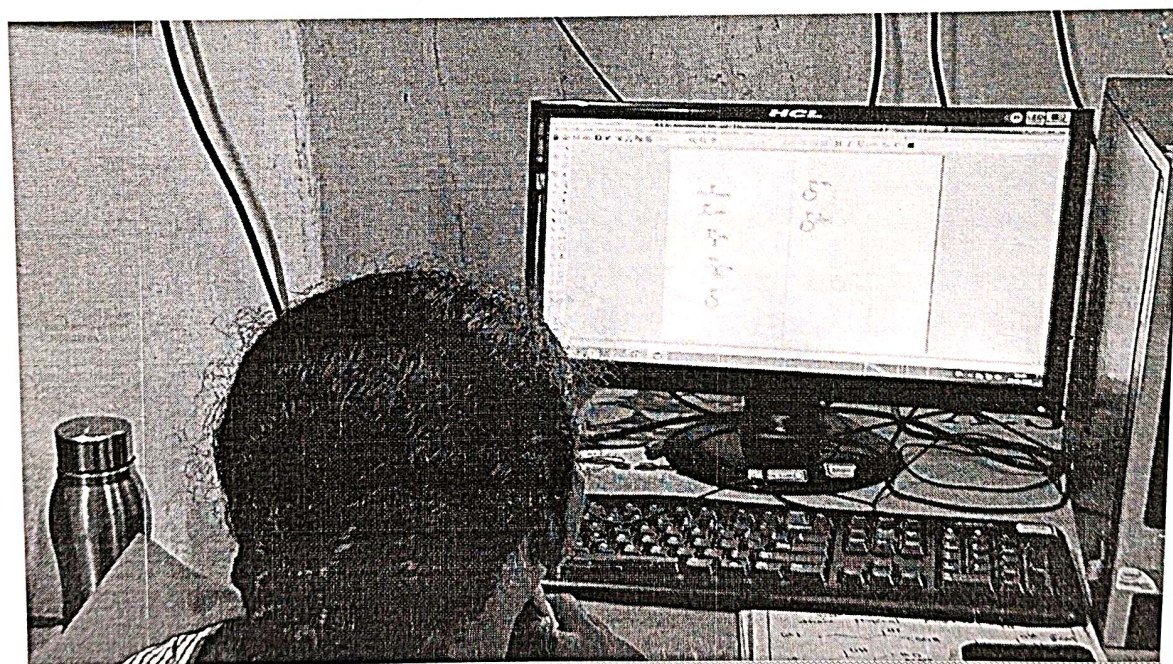
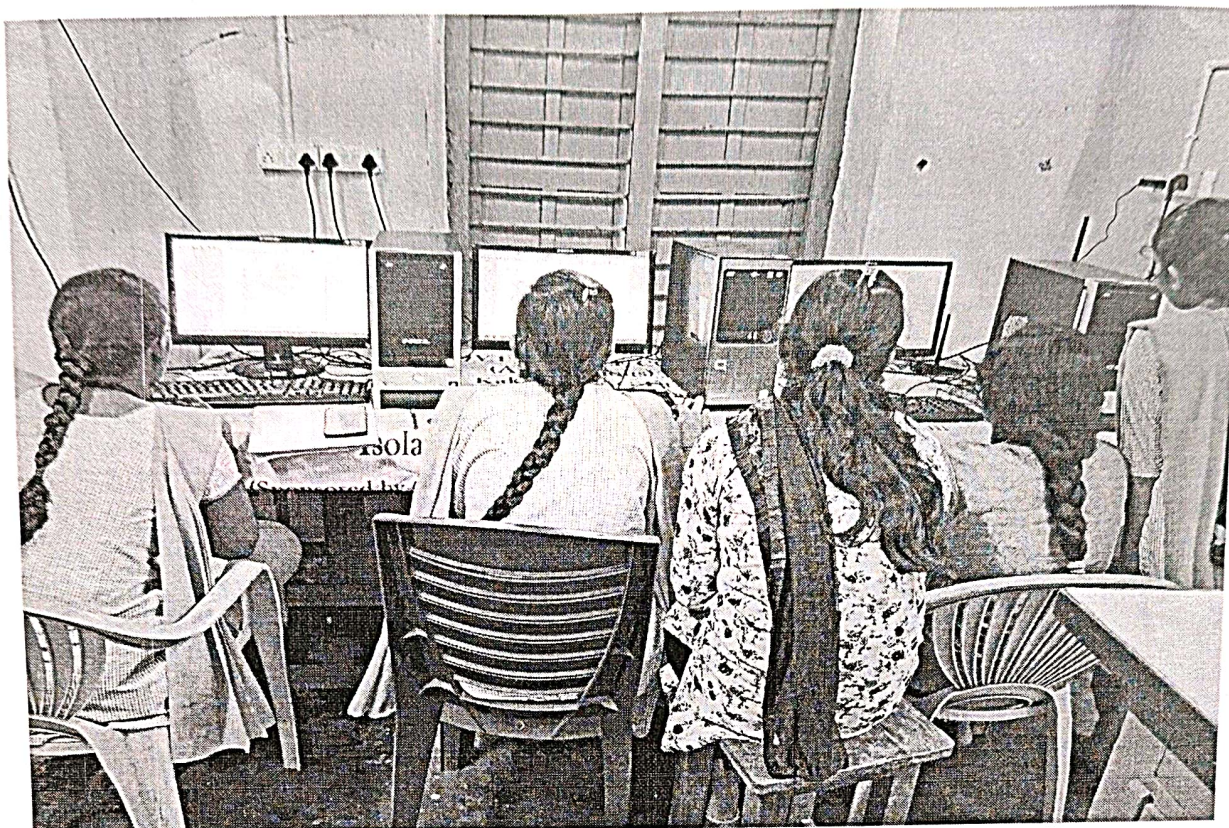
**List of Students Enrolled for Certificate Course**

S.No	Regd.No	Name of the Student	Programme
1	2373001	B.Siva Jyothi	II BSc Hons(Chemistry)
2	2373002	K.Anitha	II BSc Hons(Chemistry)
3	2373003	V.Geetanjali	II BSc Hons(Chemistry)
4	2373004	V.P.R.Priyanka	II BSc Hons(Chemistry)
5	2373005	Ch.Malleswari	II BSc Hons(Chemistry)
6	2373007	V.Navya sri	II BSc Hons(Chemistry)
7	2373008	J.Devi Sri	II BSc Hons(Chemistry)
8	2373009	Sk.Thahera	II BSc Hons(Chemistry)
9	2373010	Y.Durga Devi	II BSc Hons(Chemistry)
10	2371009	A.Anusha	II BSc Hons(Maths)
11	2371016	R.Gayathri	II BSc Hons(Maths)
12	2371022	J.Tulasi Satya	II BSc Hons(Maths)
13	2371023	A.Ruthu Anjali	II BSc Hons(Maths)
14	2371025	M.Kusuma	II BSc Hons(Maths)
15	2374017	A.Hemalatha	II BSc Hons(Computer Science)
16	2374019	B.Madhuri	II BSc Hons(Computer Science)
17	2374022	G.Devi	II BSc Hons(Computer Science)
18	2374032	P.Lova	II BSc Hons(Computer Science)
19	2374034	T.Mamatha	II BSc Hons(Computer Science)
20	2376007	B.Lakshmi Alekhya	II BSc Hons(Zoology)
21	2376014	O.Ramya Sri	II BSc Hons(Zoology)

*[Handwritten Signature]*, 29/10/2022

**HEAD**  
**DEPARTMENT OF CHEMISTRY**  
**J. S. S. DEGREE COLLEGE**  
**JAGANNAICKPUR**  
**TAKINADA-531 000**

Certificate Course in Chemdraw Molecular Modelling Software



ORIGINAL

A.S.D.GOV'T.DEGREE COLLEGE FOR WOMEN(A) KAKINADA

CHEMISTRY DEPARTMENT TIME TABLE 2023-24 (II,IV SEMESTER)

DAY	CLASS	1 (10:00 to 11:00)	2 (11:00 to 12:00)	3 (12:00 AM to 1:00 PM)	4 (2:00 PM to 3:00 PM)	5 (3:00PM to 4:00PM)	6 (4:00PM to 5:00PM)
MON	I.B.Sc	I B.Sc Minor(KJL) C-3	I B.Sc Major(KA) C-4				Chem Practicals S7 (KJL), S8 (MSL), S9 (PL) P-IV
	II B.Sc	II CBZ(PL) II MPC,Aqua,MB & HT(MSL), P-IV		II CBZ(KA) II MPC,Aqua,MB & HT(KJL), P-V			Chem Practicals S7 (KJL), S8 (MSL), S9 (PL) P-IV
TUE	I.B.Sc	I B.Sc Major(PL) C-3			I B.Sc Minor(KJL) C-3		Certificate Course
	II B.Sc			II CBZ(KA) II MPC,Aqua,MB & HT(KJL) P-V	II MPC,Aqua,MB & HT(MSL) P-IV		Chem Practicals S1 (KJL) P-V
WED	I.B.Sc	Major Practicals (KA) C-4		I B.Sc Major(PL) C-3			Certificate Course
	II B.Sc	II CBZ(PL) II MPC,Aqua,MB & HT(MSL) P-IV					Chem Practicals S5(KJL, PL), S6 (MSL) P-V
THU	I.B.Sc	Major Practicals (KA) C-3		I B.Sc Major(KA) C-4			
	II B.Sc	II CBZ(KA) II MPC,Aqua,MB & HT(KJL) P-V					Chem Practicals S7 (KJL), S8 (MSL), S9 (KA) P-V
FRI	I.B.Sc	Minor Practicals (PL) C-3			I B.Sc Major(KA) C-4		
	II B.Sc		II CBZ(KA) II MPC,Aqua,MB & HT(KJL) P-V				Chem Practicals S1 (MSL) P-IV
SAT	I.B.Sc	I B.Sc Major(PL) C-3					
	II B.Sc		I B.Sc Minor(KJL) C-3		II CBZ(PL) II MPC,Aqua,MB & HT(MSL) P-IV		Chem Practicals S5(MSL), S6 (PL) P-IV

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23/02/2024

DEPARTMENT OF CHEMISTRY  
KAKINADA-531 009

KA-



A.S.D. GOVERNEMENT DEGREE COLLEGE FOR WOMEN(A),  
KAKINADA

MODEL QUESTION PAPER

SEMESTER - II

Certificate Course in Chemdraw Molecular Modelling Software

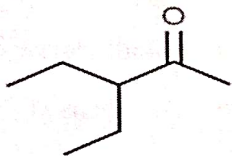
Time: 2 hours

Maximum Marks: 40M

Section- A

Answer any TEN of the following questions. Each carries TWO marks 10 X 2 = 20 M

1. Draw structure of 2-Propanol and find its physical properties M.Pt, B.Pt, density and refractive index?
2. Find IUPAC Nomenclature of following compound. Predict its elemental analysis



3. Draw stereoisomers of 2 Bromo butane ( (S)-2 Bromo butane & (R)-2 Bromo butane )?
4. Predict NMR spectrum of Ethyl alcohol and write Chemical shift values from spectrum?
5. Determine NMR spectrum of acetaldehyde? Analyse its Chemical shift values from spectrum?
6. Analyse  $^{13}\text{C}$  NMR of Toluene?
7. Write Chemical equations for Friedel crafts acylation?
8. Write Chemical equations for Pinacol-Pinacolone Rearrangement
9. Write Chemical equations for Claisen Condensation?
10. Write Chemical equations for Pinacol-Pinacolone Rearrangement?
11. Write Chemical equations for Friedel Crafts alkylation?
12. Write Chemical equations for Kolbe-Schmidt Reaction?

### Section- B

Answer any FOUR of the following questions. Each carries FIVE mark  $4 \times 5 = 20$  M

1. Draw structure of following compounds and predict their physical properties

a) Phenol b) Pyridine.

2. Predict NMR,  $^{13}\text{C}$  spectral data of Toluene? Write their spectral data?

3. Sketch structure (S)-Alanine and get its NMR Spectrums?

4. Write mechanism of Aldol reaction?

5. Write mechanism of Cannizaro reaction?

6. Write mechanism of Friedel Crafts alkylation?

7. Write mechanism of Nitration of Benzene?

8. Write mechanism of Benzoin Condensation

## Certificate Course in Chemdraw Molecular Modelling Software

### SYLLABUS

#### Module-II: Stereochemistry & Spectroscopy (12 hours)

#### Module -I: Chemical structures, Names and Physical properties (8 hours)

Drawing various chemical structures (acyclic, cyclic, polycyclic, heterocyclic hydrocarbons, Hydroxy compound, Carbonyl compounds, Acids and its derivatives), Conversion of structure into IUPAC name, Convert the IUPAC name into structure, calculation of physical properties such as density, molecular weight, molecular formula from structural formula

Drawing of Chiral centered molecules, Find the stereochemistry of molecule, drawing structure of biomolecules such as proteins, carbohydrates etc.

#### Spectral data analysis:

To predict  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectrum's from molecular structure

Predict the  $^1\text{H}$  NMR spectra and chemical shift values, Predict the  $^{13}\text{C}$  NMR spectra and chemical shift values.

#### Module-III: Chemical equations and mechanisms (20 hours)

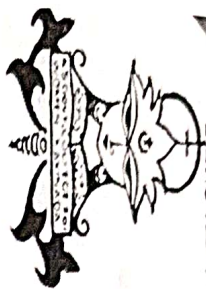
To draw following Chemical equations and Write the mechanism of chemical reaction using CHEM DRAW soft ware and to Study their reaction mechanisms through chemistry softwares-ACD ChemSketch software/ ChemDraw Ultra software.

1. Friedel crafts alkylation
2. Friedel crafts acylation.
3. Nitration of Benzene
4. Aldol Condensation
5. Cannizaro reaction
6. Benzoin Condensation
7. Claisen Condensation
8. Pinacol Rearrangement
9. Kolbe-Schmidt Reaction

**List of Students Completed Certificate Course with Grades**

S.No	Regd.No	Name of the Student	Programme	Grade
1	2373001	B.Siva Jyothi	II BSc Hons(Chemistry)	A
2	2373002	K.Anitha	II BSc Hons(Chemistry)	A
3	2373003	V.Geetanjali	II BSc Hons(Chemistry)	A
4	2373004	V.P.R.Priyanka	II BSc Hons(Chemistry)	A
5	2373005	Ch.Malleswari	II BSc Hons(Chemistry)	A
6	2373007	V.Navya sri	II BSc Hons(Chemistry)	A
7	2373008	J.Devi Sri	II BSc Hons(Chemistry)	A
8	2373009	Sk.Thahera	II BSc Hons(Chemistry)	A
9	2373010	Y.Durga Devi	II BSc Hons(Chemistry)	A
10	2371009	A.Anusha	II BSc Hons(Maths)	A
11	2371016	R.Gayathri	II BSc Hons(Maths)	A
12	2371022	J.Tulasi Satya	II BSc Hons(Maths)	A
13	2371023	A.Ruthu Anjali	II BSc Hons(Maths)	A
14	2371025	M.Kusuma	II BSc Hons(Maths)	A
15	2374017	A.Hemalatha	II BSc Hons(Computer Science)	A
16	2374019	B.Madhuri	II BSc Hons(Computer Science)	A
17	2374022	G.Devi	II BSc Hons(Computer Science)	A
18	2374032	P.Lova	II BSc Hons(Computer Science)	A
19	2374034	T.Mamatha	II BSc Hons(Computer Science)	A
20	2376007	B.Lakshmi Alekhya	II BSc Hons(Zoology)	A
21	2376014	O.Ramya Sri	II BSc Hons(Zoology)	A

*Anne*, 24/07/2024  
**HEAD**  
**DEPARTMENT OF CHEMISTRY**  
**J.S.S GOVT DEGREE COLLEGE**  
**JAGANNAPUR**  
**KAKINADA - 531 004**



A.S.D. GOVERNMENT DEGREE COLLEGE FOR WOMEN(A), KAKINADA

## Department of Chemistry

CC23CMMS/Ch

This is to certify that Ms.-----

----- of class/group has successfully complete

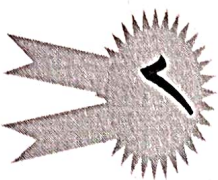
Certificate Course in "Chemdraw Molecular Modelling Software" with course

code CC23CMMS/Chem Conducted by Department of Chemistry with -----

for the academic year 2023 - 24 from 26th February 2024 to 15th June 2024.

*Handwritten signature*

*V. N. S. D.*



Course Co-ordinator

Principal

