



## DEPARTMENT OF CHEMISTRY




**Course Name : NATURAL PRODUCTS**  
**Eligibility : B. Sc(MbZC, BZC, MPC)**

**Last Date For Application :15-08-2022**

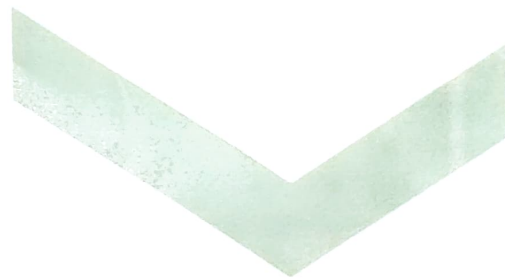
**Course Starts From : 16-08-2022**

  
HOD

  
IQAC  
Coordinator

  
**Principal**

**TTWRDC(W)**  
**Sircilla**  
**VALUE ADDED**  
**COURSE**



## NOTICE

### DEPARTRTMENT OF CHEMISTRY

**DATE:09-08-2022**

Here by informing all the interested students to enroll in the certificate course

"NATURAL PRODUCTS" conducting by the Department of Chemistry which is going to start from Dt: 16-08-2022. Those who are interested can apply.

**COURSE NAME:NATURAL PRODUCTS**

**ELIGIBILITY:B.Sc( MBZC&MPC)**

**LAST DATE FOR APPLICATION:15-08-2022**

**COURSE STARTS FROM:16-08-2022**

**EXAM DATE: 11-10-2022**



**DEPARTMENT OF Chemistry**



**IQAC COORDINATOR**



**PRINCIPAL**

**Principal**  
**TTWRDC(W)SIRCHILA**  
**Dist: Rajanna Sircilla**

TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF CHEMISTRY

VALUE ADDED COURSE

Title: Natural products      course code: VACCHEM008      Teaching hours:30 Hrs

Syllabus:

**ALKANOIDS**


Occurrence, isolation, general methods of structural elucidation and physiological action degradation, classification, based on nitrogen hetero cyclic ring. Structure elucidation and synthesis of Atropine, papaverine, quinine.

**TERPENOIDS**

Classification of terpenoids , occurrence , general methods of structure determination. Isoprene and special isoprene rule structure determination and synthesis of the following representative molecules: Farnesol Zingiberene, Cadinene and Abietic acid.

**Evaluation Procedure**

The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc., b) Practical/ study project-20 marks.

  
Principal  
TTWRDC(W) SIRICILLA  
Dist: Rajanna Sircilla  
Principal

## COURSE-03

### COURSE CODE: CHEM303

#### Duration and Class Schedule

- This course is offered for three months, with two batches in an academic year.
- Duration: 3 Months. It consists of two hours each from 4 pm - 6 pm, per week, that is 4 hours per week.
- Class Schedule: Classes shall be conducted on Thursday, Friday & Saturday days from 4 pm - 6 pm (3 hours per week).
- Total number of hours is 36 hours.

#### COURSE OUTCOMES

By the end of the course, students shall be able to:

- to understand the structural elucidation of Alkaloids.

to synthesize the alkaloids using specific reagents.

to learn the stereospecific synthesis of naturally occurring terpenoids and to understand the degradation products of terpenoids.

#### Syllabus

##### ALKALOIDS

Occurrence, isolation, general methods of structural elucidation and physiological action  
degradation, classification, based on nitrogen hetero cyclic ring

Structure elucidation and synthesis of the following:

Atropine, papaverine, quinine.

##### TERPENOIDS

Classification of terpenoids, occurrence, general methods of structure determination. Isoprene and special isoprene rule structure determination and synthesis of the following representative molecules:

Farnesol, Zingiberene, Camphene and Abietic acid.

#### Evaluation Procedure

The course shall have two components of evaluation: a) Continuous evaluation of 20 marks, comprising of quizzes, assignments, etc., covering all the modules, b) Online Mock tests of 30 marks, covering all modules.

  
Principal



## DEPARTMENT OF CHEMISTRY

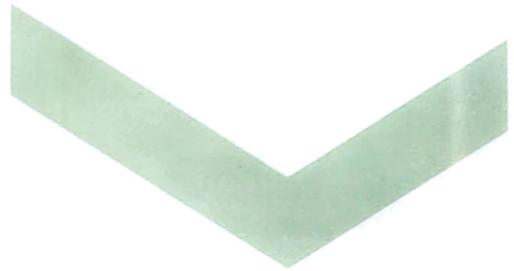


**Course Name : GREEN CHEMISTRY**  
**Eligibility : B. Sc(MbZC, BZC, MPC)**

**Last Date For Application :12-09-2021**

**Course Starts From : 13-09-2021**

**TTWRDC(W)**  
**Sircilla**  
**VALUE ADDED**  
**COURSE**



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FOAC Coordinator

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**Principal**

## NOTICE

### DEPARTMENT OF CHEMISTRY

DATE: 20-08-2021

Here by informing all the interested students to enroll in the certificate course "Green chemistry" conducting by the Department of Chemistry which is going to start from Dt: 23-08-2021. Those who are interested can apply.

COURSE NAME:GREEN CHEMISTRY

ELIGIBILITY:B.Sc( MBZC,BZC &MPC)


LAST DATE FOR APPLICATION:22-08-2021

COURSE STARTS FROM:23-08-2021

EXAM DATE:30-9-2021

  
DEPARTMENT OF Chemistry

  
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PRINCIPAL  
Principal  
TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla

TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF CHEMISTRY

VALUE ADDED COURSE

DATE- 23 / 09 /2020

**Title:** Green chemistry

**Course code:** VACCHEM021

**Teaching hours:** 30hrs

**SYLLABUS:**


Introduction to Green Chemistry

**Principles of Green Chemistry**

1. Designing a Green Synthesis using these principles; Prevention of Waste/ byproducts; maximum incorporation of the materials used in the process into the final products, Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions.
2. Prevention/ minimization of hazardous/ toxic products reducing toxicity.  
risk = (function) hazard  $\times$  exposure; waste or pollution prevention hierarchy.
3. Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluoruous biphasic solvent, PEG, solventless processes, immobilized solvents and how to compare greenness of solvents.
4. Energy requirements for reactions – alternative sources of energy: use of microwaves and ultrasonic energy. Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups.

**Evaluation Procedure**

The course shall have components of evaluation: 20 marks for Assignment work, Written examination of marks 30

  
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## **COURSE-01**

**Course code:CHEM008**

### **GREENCHEMISTRY**

#### **Duration and Class Schedule**

- This course is offered for three months, with two batches in an academic year.
- Duration: 3 Months. 3 sessions, of two hours each from 4 pm- 5 pm, per week, that is 3 hours per week.
- Class Schedule: Classes shall be conducted on Thursday, Friday & Saturday days from 4 pm - 5 pm (3 hours per week).
- Total number of hours is 36 hours.

#### **COURSE OUTCOMES**

By the end of the course, students shall be able to:

- Reduce the negative impacts of chemical products.
- Provides students about the principles of green chemistry and alternative use of more benign solvents.
- Environmental friendly solvents can lead to a safer and more cost effective processes.
- Reduces the need for hazardous and expensive solvent

#### **Syllabus**

##### **Introduction to Green Chemistry**

What is Green Chemistry? Need for Green Chemistry, Goals of Green Chemistry, Limitations/ Obstacles in the pursuit of the goals of Green Chemistry

##### **Principles of Green Chemistry**

1. Designing a Green Synthesis using these principles; Prevention of waste/byproducts, maximum incorporation of the materials used in the process



into the final products, Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions.

2. Prevention/ minimization of hazardous/ toxic products reducing toxicity.

risk = (function) hazard  $\times$  exposure; waste or pollution prevention hierarchy.

3. Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluoruous biphasic solvent, PEG, solvent less processes, immobilized

solvents and how to compare greenness of solvents.

4. Energy requirements for reactions – alternative sources of energy: use of

5. microwaves and ultrasonic energy.

6. Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups.

### Evaluation Procedure

- The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc., covering all the modules, b) Oral Examination of 20 marks, covering all modules.

  
Principles



## DEPARTMENT OF CHEMISTRY

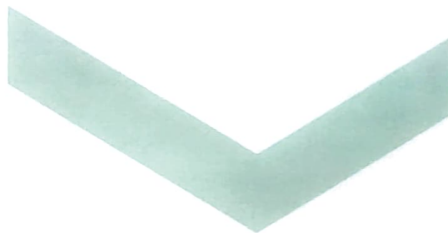


Course Name : **GREEN CHEMISTRY**  
Eligibility : B. Sc(MbZC, BZC & MPC)

**Last Date For Application : 03-09-2020**

**Course Starts From : 04-09-2020**

**TTWRDC(W)**  
**Sircilla**  
**VALUE ADDED**  
**COURSE**



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HOD

ZOAC Coordinator

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**Principal**

## NOTICE

### DEPARTMENT OF CHEMISTRY

DATE: 24-08-2020

Here by informing all the interested students to enroll in the certificate course "Green chemistry" conducting by the Department of Chemistry which is going to start from Dt: 4-09-2020. Those who are interested can apply.

**COURSE NAME: GREEN CHEMISTRY**

**ELIGIBILITY: B.Sc( MBZC & MPC)**

**LAST DATE FOR APPLICATION: 3-09-2020**

**COURSE STARTS FROM: 4-09-2020**

**EXAM DATE: 1-10-2020**



DEPARTMENT OF Chemistry

IQAC COORDINATOR



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Principal

TTWRDC(W)SIRCILLA

Dist: Rajanna Sircilla

TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF CHEMISTRY

VALUE ADDED COURSE

DATE- 23 / 09 /2020

**Title:** Green chemistry

**Course code:** VACCHEM021

**Teaching hours:** 30hrs

**SYLLABUS:**

Introduction to Green Chemistry

**Principles of Green Chemistry**

1. Designing a Green Synthesis using these principles; Prevention of Waste/ byproducts; maximum incorporation of the materials used in the process into the final products, Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions.
2. Prevention/ minimization of hazardous/ toxic products reducing toxicity.  
risk = (function) hazard × exposure; waste or pollution prevention hierarchy.
3. Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluorous biphasic solvent, PEG, solventless processes, immobilized solvents and how to compare greenness of solvents.
4. Energy requirements for reactions – alternative sources of energy: use of microwaves and ultrasonic energy. Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups.

**Evaluation Procedure**

The course shall have components of evaluation: 20 marks for Assignment work, Written examination of marks 30

  
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TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla

**Principal**

## **COURSE-01**

**Course code:CHEM008**

### **GREENCHEMISTRY**

#### **Duration and Class Schedule**

- This course is offered for three months, with two batches in an academic year.
- Duration: 3 Months. 3 sessions, of two hours each from 4 pm- 5 pm, per week, that is 3 hours per week.
- Class Schedule: Classes shall be conducted on Thursday, Friday & Saturday days from 4 pm - 5 pm (3 hours per week).
- Total number of hours is 36 hours.

#### **COURSE OUTCOMES**

By the end of the course, students shall be able to:

- Reduce the negative impacts of chemical products.
- Provides students about the principles of green chemistry and alternative use of more benign solvents.
- Environmental friendly solvents can lead to a safer and more cost effective processes.
- Reduces the need for hazardous and expensive solvent

#### **Syllabus**

#### **Introduction to Green Chemistry**

What is Green Chemistry? Need for Green Chemistry. Goals of Green Chemistry. Limitations/ Obstacles in the pursuit of the goals of Green Chemistry

#### **Principles of Green Chemistry**

1. Designing a Green Synthesis using these principles; Prevention of Waste/byproducts; maximum incorporation of the materials used in the process

into the final products, Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions.

2. Prevention/ minimization of hazardous/ toxic products reducing toxicity.

risk = (function) hazard  $\times$  exposure; waste or pollution prevention hierarchy.

3. Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluorous biphasic solvent, PEG, solvent less processes, immobilized

solvents and how to compare greenness of solvents.

4. Energy requirements for reactions – alternative sources of energy: use of

5. microwaves and ultrasonic energy.

6. Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups.

### **Evaluation Procedure**

- The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc., covering all the modules, b) Oral Examination of 20 marks, covering all modules.

~~by~~  
Principal



## DEPARTMENT OF CHEMISTRY



**Course Name : NATURAL PRODUCTS**  
**Eligibility : B. Sc(MbZC, MPC)**

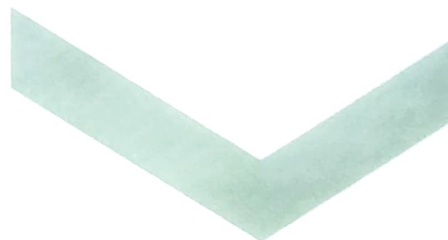
**Last Date For Application :08-09-2019**

**Course Starts From : 09-09-2019**

  
Principal

  
**Principal**  
Principal  
TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla

**TTWRDC(W)**  
**Sircilla**  
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**COURSE**



## NOTICE

### DEPARTMENT OF CHEMISTRY

**Date:26-09-2019**

Here by informing all the interested students to enroll in the certificate course "Natural products" conducting by the Department of Chemistry which is going to start from Dt: 09-09-2019 Those who are interested can apply.

**COURSE NAME: NATURAL PRODUCTS**

**ELIGIBILITY: B.Sc( MBZC & MPC)**

**LAST DATE FOR APPLICATION: 08-09-2019**

**COURSE STARTS FROM: 09-09-2019**

**EXAM DATE: 20-09-2019**

  
DEPARTMENT OF Chemistry

IQAC COORDINATOR

  
PRINCIPAL  
Principal  
TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla



TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF CHEMISTRY

VALUE ADDED COURSE

Title: Natural products      course code: VACCHEM008      Teaching hours:30 Hrs

Syllabus:

**ALKANOIDS**


Occurrence, isolation, general methods of structural elucidation and physiological action degradation, classification, based on nitrogen hetero cyclic ring. Structure elucidation and synthesis of Atropine, papaverine, quinine.

**TERPENOIDS**

Classification of terpenoids , occurrence , general methods of structure determination. Isoprene and special isoprene rule structure determination and synthesis of the following representative molecules: Farnesol Zingiberene, Cadinene and Abietic acid.

**Evaluation Procedure**

The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc.,b) Practical/ study project-20 marks.

  
Principal  
TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla

Principal

## COURSE 02

### COURSE CODE:CHEM008

#### Duration and Class Schedule

- This course is offered for three months, with two batches in an academic year.
- Duration: 3 Months. 3 sessions, of two hours each from 4 pm- 5 pm, per week, that is 3 hours per week.
- Class Schedule: Classes shall be conducted on Thursday, Friday & Saturday days from 4 pm - 5 pm (3 hours per week).
- Total number of hours is 36 hours.

#### COURSE OUTCOMES

By the end of the course, students shall be able to:

- To understand the structural elucidation of Alkaloids.

To synthesize the alkaloids using specific reagents.

To learn the stereospecific synthesis of naturally occurring terpenoids and to understand the degradation products of terpenoids.

#### Syllabus

##### ALKANOIDS

Occurrence, isolation, general methods of structural elucidation and physiological action  
degradation, classification, based on nitrogen hetero cyclic ring

Structure elucidation and synthesis of the following:

Atropine, papaverine, quinine.

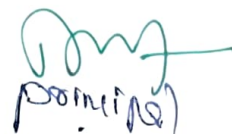
##### TERPENOIDS

Classification of terpenoids, occurrence, general methods of structure determination. Isoprene and special isoprene rule structure determination and synthesis of the following representative molecules:

Farnesol, Zingiberine, Cadinene and Abietic acid.

#### Evaluation Procedure

The course shall have two components of evaluation: a) Continuous evaluation of 20 marks, comprising of quizzes, assignments, etc., covering all the modules, b) Online Mock tests of 30 marks, covering all modules.





DEPARTMENT OF CHEMISTRY



Course Name: NATURAL PRODUCTS  
Signatory: B. Sri Mahesh, WPC

Last Date For Application: 08-07-2018

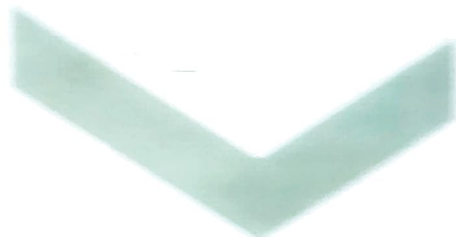
Course Starts From: 05-07-2018

PINE  
Faculty

*Sri Mahesh*  
Principal

Principal  
T.T.W.R.D.C. WPC SIRCILLA  
Mob: 9899923616

TTWRDC(W)  
Sircilla  
VALUE ADDED  
COURSE



## NOTICE

### DEPARTMENT OF CHEMISTRY

DATE: 27-06-2018

Here by informing all the interested students to enroll in the certificate course "Natural products" conducting by the Department of Chemistry which is going to start from Dt: 09-07-2018. Those who are interested can apply.

COURSE NAME: NATURAL PRODUCTS

ELIGIBILITY: B.Sc ( MBZC & MPC)

LAST DATE FOR APPLICATION: 08-07-2018

COURSE STARTS FROM : 09-07-2018

EXAM DATE: 20-08-2019



DEPARTMENT OF Chemistry

IQAC COORDINATOR



PRINCIPAL

Principal  
TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla

TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF CHEMISTRY

VALUE ADDED COURSE

Title: Natural products      course code: VACCHEM008      Teaching hours:30 Hrs

Syllabus:

**ALKANOIDS**


Occurrence, isolation, general methods of structural elucidation and physiological action degradation, classification, based on nitrogen hetero cyclic ring. Structure elucidation and synthesis of Atropine, papaverine, quinine.

**TERPENOIDS**

Classification of terpenoids , occurrence , general methods of structure determination. Isoprene and special isoprene rule structure determination and synthesis of the following representative molecules: Farnesol Zingiberene, Cadinene and Abietic acid.

**Evaluation Procedure**

The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc.,b) Practical/ study project-20 marks.

  
Principal  
TTWRDC(W), SIRICILLA  
Dist: Rajanna Sircilla  
Principal

## COURSE-02

### COURSE CODE:CHEM008

#### Duration and Class Schedule

- This course is offered for three months, with two batches in an academic year.
- Duration: 3 Months. 3 sessions, of two hours each from 4 pm- 5 pm, per week, that is 3 hours per week.
- Class Schedule: Classes shall be conducted on Thursday, Friday & Saturday days from 4 pm - 5 pm (3 hours per week).
- Total number of hours is 36 hours.

#### COURSE OUTCOMES

By the end of the course, students shall be able to:

- To understand the structural elucidation of Alkaloids.

To synthesize the alkaloids using specific reagents.

To learn the stereospecific synthesis of naturally occurring terpenoids and to understand the degradation products of terpenoids.

#### Syllabus

##### ALKANOIDS

Occurrence, isolation, general methods of structural elucidation and physiological action, degradation, classification, based on nitrogen hetero cyclic ring

Structure elucidation and synthesis of the following:

Atropine, papaverine, quinine.


##### TERPENOIDS

Classification of terpenoids, occurrence, general methods of structure determination. Isoprene and special isoprene rule structure determination and synthesis of the following representative molecules:

Farnesol, Zingiberine, Cadinene and Abietic acid.

#### Evaluation Procedure

The course shall have two components of evaluation: a) Continuous evaluation of 20 marks, comprising of quizzes, assignments, etc., covering all the modules, b) Online Mock tests of 30 marks, covering all modules.

  
Principal