



S.K.E. SOCIETY'S  
**RANI PARVATI DEVI COLLEGE**  
OF ARTS AND COMMERCE, BELAGAVI

Department of Geography

ORGANIZES

A CERTIFICATE COURSE

ON

# Hydrology and Water Resources Management

- Course Duration: 6 weeks (30 Hours)
- Date: Second week of March to second week of April, 2018
- Student Intake Capacity : 20

**RANI PARVATI DEVI COLLEGE OF ARTS AND COMMERCE,  
BELAGAVI**

**STUDENT NOTICE**

This is to inform all the students of BA, that the Department of Geography is conducting certificate course in Hydrology and Water Resources Management in the month of January, 2019.

The interested students are hereby informed to contact the course coordinator to enroll their name for the course, on or before 20<sup>th</sup> December, 2018.



Course Coordinator



Principal

R.P.D. College, Belagavi

**PRINCIPAL**  
R.P.D. COLLEGE OF ARTS AND COMMERCE,  
BELAGAVI

## DEPARTMENT OF GEOGRAPHY

### NOTICE

This is to inform all the B.A. Geography students that, the Department of Geography is going to start the certificate course in HYDROLOGY AND WATER RESOURCES MANAGEMENT from first week of January, 2019. The interested students are hereby informed to register their name for the same to Dr. (Smt). S.I.Kittali on or before 20<sup>th</sup> December, 2018.

Date: 08.12.2018



HOD

Department of Geography  
RPD College, Belagavi



PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELGAUM

2018 - 19

(2)

Jan - 2019

# R.P.D.COLLEGE OF ARTS AND COMMERCE, BELAGAVI

## DEPARTMENT OF GEOGRAPHY

### **CERTIFICATE COURSE**

#### ***TOPIC: HYDROLOGY AND WATER RESOURCES MANAGEMENT***

#### **Course Description:**

Hydrology is studying the movement, distribution and quality of water on the planet, while water management is related to the development of policies and regulations. Resources and sustainability are analysed in the practical parts of a Bachelor's degree in hydrology and water management. The discipline covers both academic study and development based on solutions. Research institutes offering prestigious Masters and Bachelors degrees in Hydrology and Water Management are known worldwide, especially among students. It is critical to develop effective processes to manage these resources and decrease negative impacts on the ecosystem.

#### **Course Objectives:**

This course has the following objectives:

1. to study the distribution of water that is a prime resource for development of a civilization.
2. to know diverse methods of collecting the hydrological information, which is essential, to understand surface and ground water hydrology.
3. This course will enable students to depict spatial phenomenon of hydrological mapping.
4. This will help students to know the importance of water conservation.



PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELGAUM

## **Instructional method and pedagogy**

### **(Continuous Internal Assessment Scheme) (CIA):**

1. At the start of course, the course delivery pattern, prerequisite of the subject will be discussed. Lecture may be conducted with the aid of multi-media projector, black board, PPT's and video clippings, etc.
2. Attendance is compulsory in lectures and practical which carries marks.
3. At regular intervals assignments will be given. Students should submit all assignments during given period.
4. The course includes a practical, where students have an opportunity to build an appreciation for the concept being taught in lectures.

### **Students Learning Outcomes:**

1. Provide a background in the theory of hydrological processes and their measurement.
2. Apply science fundamentals to solve current problems and to anticipate, mitigate and prevent future problems in the area of water resources management.
3. An ability to manipulate hydrological data and undertake widely-used data analysis.
4. A systematic understanding of the nature of hydrological stores and fluxes and a critical awareness of the methods used to measure, analyze and forecast their variability; and the appropriate contexts for their application.
5. Different methods and importance of rain water harvesting.

## Section- A

**Course Duration:** 6 weeks (30 Hours)

### **Lectures and Labs:**

**Lectures** : Monday and Tuesday 2.00 pm to 3.00 pm

**Labs** : Friday and Saturday 2.00 pm to 4.00 pm

**Attendance:** Minimum 75%

**Student Intake Capacity** 20

**Fees** :NIL

### **Grading Summary:**

| Particulars                 | Points Possible | Percentage |
|-----------------------------|-----------------|------------|
| 1 <sup>st</sup> Theory Exam | 20              | 20         |
| 1 <sup>st</sup> Lab Exam    | 20              | 20         |
| 2 <sup>nd</sup> Theory Exam | 20              | 20         |
| 2 <sup>nd</sup> Lab Exam    | 20              | 20         |
| Presentation                | 20              | 20         |

### **Grading Scale:**

| Grade | Percentage     |
|-------|----------------|
| A     | 70 % and Above |
| B     | 50 % – 69 %    |
| C     | Less than 50 % |

*Suhis*  
PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELGAUM

## Section- B

### **SYLLABUS:**

**Unit -I:** Hydrology Introduction, Hydrologic cycle, Climate and water availability, Water balances, Precipitation, Importance of water on earth surface - Forms of water, Classification, Variability, Measurement, Evaporation and its measurement.

**( 08 hours)**

**Unit -II: Dynamics of Groundwater:** Occurrence and movement of groundwater, Factors governing ground water flow, Types of aquifers, porosity, specific yield, specific retention, storage Coefficient, permeability, Conjunctive use and it's necessity.

**Reservoir:** Types, Investigations, Site selection, Zones of storage, Safe yield, Reservoir capacity, Reservoir sedimentation and control.

**Flood Management:** Indian rivers and floods, Causes of flooding, Flood damage analysis.

**(10 hours)**

**Unit -III : Drought Management and Water Harvesting:** Definition of drought, Causes of drought, measures for water conservation and augmentation, drought contingency planning.

**Water harvesting:** rainwater collection, small dams, runoff enhancement, runoff collection, ponds, tanks, natural and artificial ground water recharge methods. Environmental aspects in water resources planning.

**(12 hours)**

  
PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELGAUM

## **Recommended Study Materials**

### **A. Reference Books:**

1. Garg S.K., Hydrology and Water Resources Engineering
2. Modi, P.N., Irrigation Water Resources and Water Power Engineering, Standard Book House, New Delhi.
3. P.Jaya Rami Reddy, A Textbook of Hydrology, University Science Press.
4. Raghunath, H.M., Groundwater, 1987, Wiley Eastern Ltd., New Delhi.
5. Subramanya, K., Engineering Hydrology, Tata McGraw Hill, New Delhi.
6. Todd, D.K., Groundwater Hydrology, 1993 John Wiley & Sons..

### **B. Web Materials:**

1. <http://nptel.iitm.ac.in>
2. <http://www.groundwatermanagement.org>
3. <http://www.uiowa.edu>
4. <http://www.ngwa.org>

## Section- C

### Examination:

- One theory exam - 2 hour each.
- One practical exam - 2 hour each.
- Presentation skills.

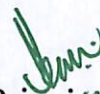
### **STAFF IN-CHARGE:**

1. Dr. Abhay M. Patil  
Assistant Professor & HOD
2. Dr. M. S. Kurani  
Assistant Professor
3. Dr.(Smt). S. I. Kittali  
Assistant Professor



Head

Department of Geography



Principal

R.P.D.College,Belagavi

PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELAGAVI-6



PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELGAUM

## DEPARTMENT OF GEOGRAPHY

[illegible]

# R.P.D.COLLEGE OF ARTS AND COMMERCE, BELAGAVI

## DEPARTMENT OF GEOGRAPHY

### CERTIFICATE COURSE IN HYDROLOGY AND WATER RESOURCES MANAGEMENT

| Sl.No | Name of Student         | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  |
|-------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1     | AJEY PRABHUDEV HIREMATH | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  |
| 2     | ARPITA S PATIL          | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  |
| 3     | ASHISH ASHOK PATIL      | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  | AP  |
| 4     | BASAVARAJ KAMBAR        | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   |
| 5     | BASAVARAJ NAGAPPA ITAGI | B   | B   | B   | B   | B   | B   | B   | B   | B   | B   | B   | B   | B   | B   | B   |
| 6     | BHAGYASHRI SADANAND     | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  | BS  |
| 7     | EESHAN PRASANNA MOGHE   | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  | Em  |
| 8     | GOPAL GADIGEPPA PUJERI  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  | GP  |
| 9     | LAXMI A R               | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  | LR  |
| 10    | MANJIRI MARUTI PATIL    | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  | MB  |
| 11    | MANJULA ADIVEPP CHIGARI | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  | MC  |
| 12    | MARUTI HALAPPA          | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  | MH  |
| 13    | MRUTUNJAY DURAGAPPA     | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  | MD  |
| 14    | POOJA KAMBLE            | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  | PK  |
| 15    | POOJA M PADMANNAVAR     | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  | PP  |
| 16    | PRADIP NAGESH KAMBLE    | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK | PNK |
| 17    | RAGHAVENDRA MADIGAR     | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD | RMD |
| 18    | RISHITA R TELI          | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  | RT  |
| 19    | SHILPA BASAVARAJ KOLKAR | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  | SK  |
| 20    | TRIVENI VIJAY DUPATANE  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  | TV  |

*Signature*

PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELAGAVI-6

*Signature*

PRINCIPAL  
R.P.D. College of Arts & Commerce  
BELAGAVI-6



**S.K.E. Society's**  
**RANI PARVATI DEVI COLLEGE OF ARTS & COMMERCE,**  
**TILAKWADI, BELAGAVI**

**Certificate of Merit**

*This is to certify that, Mr. / Ms. \_\_\_\_\_*  
*at B.A. \_\_\_\_\_ Semester has successfully completed Certificate*  
*Course in \_\_\_\_\_ conducted by the*  
*Dept. of \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_*

Head of the Department

Principal  
R.P.D.College of Arts & Commerce,  
Belagavi