



## Ministério da Educação

Gabinete do Ensino  
Superior, Ciência e Tecnologia

### **ANÚNCIO**

#### **CURSO DE CURTA DURAÇÃO EM PROCESSO DE TRATAMENTO DE ESGOTO NA ÍNDIA**

O Serviço do Ensino Superior (SES) torna público que o Governo da Índia oferece um Curso Certificado em Processo de Tratamento de Esgoto para o ano académico de 2020. Os candidatos interessados devem enviar seu formulário de inscrição em [itec.dakar@mea.gov.in](mailto:itec.dakar@mea.gov.in)

**até 31 de dezembro de 2019.**

**Duração do curso: 4 semanas**

Data de início: 20 de janeiro de 2020 / Data de término: 14 de fevereiro de 2020

Localização: Rashtriya Chemicals And Fertilizers Limited, Mumbai Índia

#### **Objetivos do Curso:**

Fornecer exposição às tecnologias de tratamento de água / esgoto disponíveis em futuros mapas e identificar tendências e necessidades futuras.

Visão geral das mais recentes tecnologias de tratamento de água / esgoto.

Incentivar o conhecimento técnico dos participantes em uma ampla gama de técnicas de tratamento de água / esgoto, com o entendimento de adotar as melhores opções de tecnologia disponíveis, sistemas económicos, com consumo mínimo de energia, juntamente com as melhores abordagens de segurança e gestão ambiental.

Aprimorar as habilidades analíticas e de resolução de problemas dos participantes, gerando conscientização para identificar e resolver ineficiências operacionais, se houver em suas instalações.

Proporcionar uma oportunidade para trocar ideias sobre uma gama variada de tópicos de produção com plataforma aberta com os principais tecnólogos e participantes do workshop.

Quem deve participar:

- Funcionários do governo, setor público e privado, universidades, câmaras de comércio e indústria
- Pessoas envolvidas em gestão de água / tratamento de esgoto em empresas municipais da cidade

**Critérios de elegibilidade:**

Licenciatura é obrigatório. Ocupantes de nível júnior / médio, com foco especial em técnicas de conservação de água / tratamento de esgoto e setores aliados.

Serviço do Ensino Superior, na Praia, aos 23 de dezembro de 2019.





# Certificate Course in Sewage Treatment Process

Course duration: 4 Weeks

Start Date: 20<sup>th</sup> January 2020 End Date: 14<sup>th</sup> February 2020

**Rashtriya Chemicals And Fertilizers Limited, Mumbai**  
(A Government of India Undertaking)

RCFL | Sewage Treatment Process |

## Rationale:

In the past, Civilization has developed and flourished on the banks of rivers because 'Water is Life', whereas in present the scenario is different. Due to Urbanization, the migration of people has been encouraged from villages to the urban areas generating environmental issues. Today's main environmental issue is, supply of sufficient potable water to the population, which has become prime and crucial task. Out of total water supplied for domestic and industrial use, generally 60 to 80% waste water is generated. Its safe disposal and treatment is the need of time.

Water is getting scarce day by day. Therefore, it becomes our moral duty to recycle and reuse water for the benefit of Mankind.

Conserving and ensuring continuous availability of potable water source for future generations where the withdrawal of fresh water from an ecosystem should not exceed its natural replacement rate.

It has been observed that waste water treatment facilities consume a significant amount of energy. In some regions of the world over 15% of total electricity consumption is devoted to water treatment. Therefore, it is need of an hour to rethink about the process used. We need to put our efforts to install and adopt 'State of Art' technology for cost effective and energy efficient process / system.

RCF has been situated in the heart of Mumbai City and is operating Sewage Treatment Plant and Effluent Treatment Plant successfully. 23000 m<sup>3</sup> per day of sewage is being treated and 80% water is being recovered as process water.

Considering the huge success of the existing Sewage Treatment Plant RCF is in the process of setting up a new Sewage Treatment Plant of 5 MGD capacity, adjacent to the existing STP plant. Maximum quantity of the treated water will be supplied to nearby industries.

## Objectives of the Course:

- To provide exposure for water / sewage treatment technologies available with future road maps and identify future trends and needs.
- Overview of the most recent water /sewage treatment technologies.
- To encourage participants' technical knowledge across a broad range of water / sewage treatment techniques, with understanding to adopt the best available technology options, cost effective systems, with minimal energy consumption along with best approaches to safety and environmental management.
- To enhance the participants' analytical and trouble-shooting skills by generating awareness to identify and resolve operational inefficiencies, if any in their facilities.

- To provide an opportunity to exchange ideas on a varied range of production topics with open platform with leading technologist and workshop participants.

### Who Should Attend:

- Employees and Officials in Government, Private and Public Sector, Universities, Chambers of Commerce and Industry
- People engaged in Water Management / Sewage Treatment in City Municipal Corporations

### Course content:

#### Module 1: Introduction

- Definitions
- Sources of Sewage
- Sewage Discharge
- Effect of Untreated Wastewater Disposal

#### Module 2: Water Quality and Estimation of Organic Content

- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)

#### Module 3: Characteristics Of Sewage

- Temperature
- pH
- Colour, Odour and Solids
- Nitrogen, Phosphates and Chlorides
- Organic Matter

#### Module 4: Overview of Sewage treatment Methods

- Physical Unit Operations
  - Screens
  - Grit Chambers
- Chemical & Biological Unit Processes
  - Coagulation
  - Flocculation
  - Sedimentation
  - Membrane Bioreactors
  - Activated Sludge Process
  - Reverse Osmosis
  - Ultra Filtration

#### Module 5: Sludge Management

- Thickening
- Dewatering

- Belt Filter Press System
- Centrifugation
- Anaerobic Digestion

### **Module 6: Water Pollutants and Effects on Environment**

- Organic pollutants
- Pathogens
- Nutrients and agriculture runoff
- Suspended solids and sediments (organic and inorganic)
- Inorganic pollutants (salts and metals)
- Thermal Pollution
- Radioactive pollutants

The teaching - learning involves a wide range of pedagogical approaches, including interactive lectures, group exercises, case studies, visits to factory, research institutes, city municipal corporations, etc.

### **Benefits to Participants:**

The participants would get a holistic exposure to:

- In-depth knowledge and exposure of water conservation / sewage treatment technologies
- Enhance the participants' analytical and trouble-shooting skills
- Provide platform to exchange ideas on a varied range of production topics with leading technologists

### **Course duration: 4 Weeks**

Start Date: 20<sup>th</sup> January 2020 End Date: 14<sup>th</sup> February 2020

### **Faculty Profile:**

Faculty will be deployed from the rank of Chief Engineers and above who are

- Qualified engineers from the premier institutes
- With excellent teaching skills and
- Having a rich experience in the field for over twenty five years

### **Eligibility Criteria:**

Bachelor's degree is a must. Junior / Middle level position holders with special focus on Water Conservation / Sewage Treatment Techniques and Allied Sectors.

### **Capacity of Participants:**

Minimum 10, Maximum 25 Participants



**Ministry of External Affairs**  
Government of India

**GOVERNMENT OF INDIA  
MINISTRY OF EXTERNAL AFFAIRS**

(Application for the courses fully funded by the Ministry of External Affairs, Government of India)

(Please read instructions carefully before applying)

**APPLICATION FORM**

3 x 4 cm

**PART - I**

Photograph

Nationality : _____			Name of Course : _____		
Organization : _____			Commencing from : _____ to _____ DD/MM/YYYY DD/MM/YYYY		
<b>1. Personal Particulars</b>					
Name(s): _____					
Surname: _____					
Sex (tick one): MALE / FEMALE					
Marital Status: _____					
Date of Birth: _____ Date - Month – Year					
Passport No.: _____ Date & Place of Issue: _____					
Valid Till: _____					
		Office		Home	
Address:					

Tel Nos.			
Mobile/Cell:			
Fax:			
E-mail:			
Special dietary needs, if any: _____			
<b>Person(s) to be notified in case of Emergency</b>			
	Official Contact	Personal / Family Contact	
Name:			
Address:			
Tel Nos.			
Mobile/Cell:			
Fax:			
E-mail:			
<b>Educational Qualification(s)</b>			
Degree / Diploma / Certificates	Year	Name of Educational Institute	
1.			
2.			
3.			
4.			
<b>Professional Qualification(s), if any:</b>			
Professional Qualification(s)	Year	Name of Institute	
1.			
2.			
3.			
4.			
<b>2. Details of Employment/ Profession (current &amp; previous)</b>			
Name of Employer / Department / Company	Position	Period	Description of work
1.			
2.			
3.			
4.			
<b>Are you an employee of: (Mark appropriate box)</b>			
a. Government <input type="checkbox"/> b. Semi-government <input type="checkbox"/> c. Others <input type="checkbox"/>			
<b>Details of present employer</b>			
Name _____ / _____		address: _____	
Tel. No. : _____			
E-mail : _____			
<b>3. Have you ever attended a course sponsored by the Government of India? (Mark one)</b>			
<b>YES/NO</b>			
If answer to 3 is yes, details of the Course _____			



<b>4. Details of Course(s) attended, if any, outside your country</b>			
Country	Course Details & Duration	Year	Sponsor/Programme
<b>5. Please describe in your own words (about 100 words):</b>  <b>(a) qualification/experience in the related course applied for; and</b> <b>(b) reason(s) for applying for this training course</b>			
<b>6. Certification of English language proficiency (by Indian Mission/Designated Authority)</b>			
	Good	Basic	Remarks
Spoken			
Written			
Mother tongue / Native language: _____ / Other language(s), if any: _____  English Language test administered by:  Name & Address: _____ _____ _____  Tel. Number: _____ E-mail: _____  <div style="text-align: right;">Signature with Date: _____</div>			

## MEDICAL REPORT

**(To be certified by a doctor/hospital on the panel of the Indian Mission, UN Mission, if any or as designated by Indian Mission)**

(i) Name of Applicant:
(ii) Age:
(iii) Sex: (Male / Female)
(iv) Height (cm):
(v) Weight (kg):
(vi) Blood Group:
(vii) Blood Pressure:

(i) Name of Applicant:	
1. Is the person examined in good health at present?	
2. Is the person examined physically and mentally to carry out intensive training away from home?	
3. Is the person free of infectious diseases (HIV/AIDS, tuberculosis, trachoma, skin diseases etc), Yellow Fever certificate (in case of people coming from that region or as laid out in WHO regulations)?	
4. Does the person examined have any medical condition or defect which might require treatment during the course?	
5. List of any observed abnormalities indicated in the chest X ray.	

I certify that the applicant is medically fit to undertake a training course in India.

Name of Doctor/Physician: \_\_\_\_\_

Registration No.: \_\_\_\_\_

Address of Clinic / Hospital \_\_\_\_\_

City/Town): \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Doctor/Physician \_\_\_\_\_ Seal of Clinic/Hospital: \_\_\_\_\_

### IMPORTANT NOTICE

- ☐ Please read the form carefully. The application will be automatically rejected if any column is inaccurate, incomplete or blank.
- ☐ Declaration by the candidate and the recommendations from employer, if any, are compulsory pre-requisites.
- ☐ Working knowledge of the English language is a pre-requisite. For English language and language related courses, basic knowledge of English is required.
- ☐ Candidates who leave the course midway for personal reasons without prior permission of the Ministry of Home Affairs or remain absent from the programme without sufficient reasons are expected to refund the cost of training and airfare to Government of India.
- ☐ Female candidates are hereby advised that they should not travel to India to attend the Course applied for in case they are in family way.

### UNDERTAKING BY THE APPLICANT

I, \_\_\_\_\_  
(Name, Middle name, Family name)

of (country) \_\_\_\_\_ certify that information provided by me in this form is true, complete and correct.

I also certify that:

- (i) I have read the course brochure and that I am aware of the course contents and living conditions in India\*.
- (ii) I have sufficient knowledge of English to participate in the training programme.
- (iii) I am medically fit to participate in the Course and have submitted a medical certificate from the designated doctor.
- (iv) I have not attended any programme previously sponsored by Government of India.
- (v) I have not applied for or am not required to attend any other training course/conference/meeting etc., during the period of the course applied for.

If accepted for the Training Programme, I undertake to:

- (a) Comply with the instructions and abide by Rules, Regulations and guidelines as may be stipulated by both the nominating and sponsoring Governments in respect of the training;
- (b) Follow the full and complete course of study or training and abide by the Rules of the University/Institution/ Establishment in which I undertake to study or undergo training;
- (c) Submit periodic assessments / tests conducted by the Institute (progress report which may be prescribed);
- (d) Refrain from engaging in political activity, or any form of employment for profit or gain;
- (e) Return to my home country at the end of the course of study or training;
- (f) I also fully undertake that if I am granted a training award, it may be subsequently withdrawn if I fail to make adequate progress or for other sufficient cause determined by the host Government.

**For lady participants : I confirm that I will not travel to India to attend the Course I have applied for if I am in the family way.**

Date:

Place:

(SIGNATURE OF THE APPLICANT)

Name: \_\_\_\_\_

\* Details of the course are on the website of the Institute or can be obtained from them by e-mail.

## PART – II

### To be completed by the authorized official of the Nominating Government/Employer

I, \_\_\_\_\_ on behalf of the  
Government of \_\_\_\_\_ certify that:

I have examined the educational, professional and other certificates quoted by the nominee in Part – I of this form and I am satisfied that they are authentic and relate to the nominee.

I have gone through the medical certificates and X-ray reports produced by the nominee which state that he/she is medically fit and free from any infectious disease such as HIV/AIDS and Yellow Fever and that having regard to his/her physical and mental history there is no reason to indicate that the nominee is other than fit to undertake the journey to India and to undergo training in India.

The nominee has adequate knowledge of spoken and written English to enable him/her to follow the course of training for which he/she is being nominated.

I nominate Mr./Mrs./Miss \_\_\_\_\_ on behalf of the  
Government of \_\_\_\_\_/as employer.

Name of Nominating Authority:

Designation:

Address:

Date:

Place:

Signature  
(With seal)  
Name and Designation  
(in block letters)

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