

NEXT EDITION

(Date to be determined)

e-learning course "INTRODUCTION TO RENEWABLE ENERGY DESALINATION"

www.desreslearning.com

INTRODUCTION

The first and only online training course focused on the topic "desalination by renewable energies" with the aim of providing students with the latest knowledge of the different existing technologies involving the use of renewable energies to drive desalination technologies.



MORE DETAILS

WHAT?: 4 weeks e-learning course focused on the main aspects of desalination, renewable energies and the autonomous combination.

By WHO?: ITC Water Department Staff with experience in this field since 1996.

WHOM?: addressed for professionals, students and those who have an interest in the desalination and renewable energies fields (cooperation agencies, NGO's, research centers, etc.)

TECH REQUIREMENTS?: a reliable computer and internet access, at the very least.

MORE INFO?: visit www.desreslearning.com or contact us desreslearning@itccanarias.org



itc INSTITUTO TECNOLÓGICO
DE CANARIAS

<http://www.itccanarias.org/web/>



e-learning course

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PLATFORM

Based on Moodle, this online training platform has an interactive, flexible and friendly use philosophy. The students are the main leader of their own training process. DES-RES online platform is highly adaptable and ready to offer tailor-made courses.

CONTENTS

The course is organized in **10 chapters** for evaluation. Quizzes, glossaries, videos, games, links and other items complete the training process.

1. Basic concepts.
2. Desalination I. Membrane processes.
 - 2a. Energy recovery in RO desalination.
 - 2b. Last generation membranes.
3. Desalination II. Distillation processes .
4. Solar thermal energy and MED.
5. Solar thermal energy coupled to HD or MD.
6. RO systems powered by PV solar energy.
7. RO systems powered by wind energy.
8. Other technologies.
9. Not technical aspects.
10. Practical case: preliminary design.

4. Examples of operating systems (2)
- Location: Pozo Izquierdo, Gran Canaria Island. CASE OF STUDY. DESSOL®
- Average operation: 8 h/d

RO unit 12 (includes an...)

Re: EDR & RO
By H Baby - Thursday, 20 October 2011, 06:37 PM
I won't really answer your question, I would rather add another one 😊
As far as I know, many RO plants repress the brine flow into another set of membranes, therefore, the salinity trough them should be way over 45g/l, and I guess they work fine.
Can somebody enlighten us?
Oh, I better begin to ask about the differences of the environmental impact between RO and ED. I believe that the ED environmental impacts are lower than RO, and I can't see why.
Thank!
[Show parent] [Edit] [Sign] [Delete] [Reply]

Re: EDR & RO
By Juan Antonio de la Fuente - Friday, 21 October 2011, 11:39 AM
You are right Baby, this second-stage RO system, is called Brine Conversion System (BCS), is capable of recovering additional product for recoveries of up to 60%. For further information:
http://www.generator.com/Technical/207Pages_CostAmericaEnglishTP1021EN.pdf
[Show parent] [Edit] [Sign] [Delete] [Reply]

Re: EDR & RO
By Antonio Rey - Saturday, 22 October 2011, 02:19 PM
Hello Baby,
I would be really interested from the process in the Zero liquid discharge desalination plant in Qatar looks like. Do you have more information about this plant and Zero liquid discharge desalination plants in general?
[Show parent] [Edit] [Sign] [Delete] [Reply]

Case 1. SUMMARY & QUESTIONS

Charge controller 40 Vdc Inverter 3kW
PV POWER (kW) 1.362
Nominal capacity (kWh) 1.362

Water production (m ³ /hour)	0.67
Water production (m ³ /day)	4.00
Nominal capacity (m ³ /day)	16.00

QUESTION 1
Calculate two scenarios, one for maximum and other for minimum water and compare the results. Copy the above values (PV power, nominal capacity of batteries and water production) and comment the differences.
ANSWER

QUESTION 2
Select two locations, one with good solar radiation, and other with low radiation, and compare the above results, which is the optimal between the PV power for the two situations? Comment the results.
ANSWER

QUESTION 3 (open)
From your point of view and taking into account the advantages of a system like this? could be considered as potential sites for the installation of a system like this?
ANSWER

WHAT DO OUR STUDENTS THINK?

Many thanks for the **high level of pedagogy tools used** in this course: the **clarity** by which the chapters, the quiz and the forums, were **structured** and the **good organization** of team managers were the force points of this course.

For me, the main advantage of the course is that you not only learn what is written on the books but **people from all over the world show you different situations and points of view** which you are not used to. Not often you have the chance to **learn so much in such a short time!**

It has been a very exciting experience, to get to learn about two interesting issues integrated together: desalination and RES. **The e-learning platform allowed me to learn in my own pace** while still under guidance of an experienced teacher. The interaction with other people and different experiences yet, sharing the same interest, is very beneficial.



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