

Universidad de Puerto Rico  
Recinto Universitario de Mayagüez  
SENADO ACADEMICO  
Mayagüez, Puerto Rico

CERTIFICACION NUMERO 78-8

Yo, Gloria A. Viscasillas, Secretaria del Senado Académico del Recinto Universitario de Mayagüez de la Universidad de Puerto Rico, CERTIFICO que en la reunión ordinaria celebrada el día 14 de febrero de 1978 este organismo aprobó la redescrición y cursos nuevos del Departamento de Ingeniería Civil de la Facultad de Ingeniería según se describen a continuación:

A. Redescrición y cambio en título:

INCI 523. INTRODUCCION A LA HIDROLOGIA. Tres horas crédito. Tres horas de conferencia semanales. Requisito previo: INGE 363.

Precipitación y conceptos meteorológicos asociados a éstos, pérdidas en la precipitación, proceso de escorrentía, técnicas de análisis hidrológico, modelos hidrológicos.

INCI 523. INTRODUCTION TO HYDROLOGY. Three credit hours. Three hours of lecture per week. Prerequisite: INGE 363.

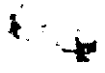
Precipitation and associated meteorological concepts, precipitation losses, runoff, techniques of hydrological analysis and hydrological models.

B. Cursos Nuevos:

INCI 562. MANEJO DE DESPERDICIOS SOLIDOS. Tres horas crédito. Tres horas de conferencia semanales. Requisito previo: INCI 422.

Problema de los desperdicios sólidos: reducción de volumen y almacenaje de los desperdicios sólidos, diseño y mejoramiento óptimo de los sistemas de recolección, reutilización, sistemas integrados de tratamiento y eliminación.





1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail.

2. The second part of the document outlines the various methods used to collect and analyze data. These methods include direct observation, interviews, and the use of specialized software tools. Each method has its own strengths and limitations, and it is important to choose the most appropriate one for the specific research objectives.

3. The third part of the document describes the process of data collection and analysis. This involves identifying the key variables to be measured, designing the data collection instruments, and then carrying out the data collection process. Once the data has been collected, it must be analyzed to identify any patterns or trends.

4. The fourth part of the document discusses the importance of data quality and the steps that should be taken to ensure that the data is accurate and reliable. This includes checking for errors, missing data, and outliers, and taking appropriate action to address any issues that are identified.

5. The fifth part of the document discusses the importance of data security and the steps that should be taken to protect the data from unauthorized access or loss.

6. The sixth part of the document discusses the importance of data storage and the steps that should be taken to ensure that the data is stored securely and for a long period of time.

7. The seventh part of the document discusses the importance of data sharing and the steps that should be taken to ensure that the data is shared in a secure and controlled manner. This includes identifying the appropriate recipients of the data and ensuring that they have the necessary permissions to access it.

8. The eighth part of the document discusses the importance of data archiving and the steps that should be taken to ensure that the data is archived in a secure and accessible manner.

**INCI 562. SOLID WASTE MANAGEMENT.** Three credit hours. Three hours of lecture per week. Prerequisite: INCI 422.

Extent of the solid waste problem, volume-reduction and storage of solid wastes, design and optimization of collection systems, recycling, integrated treatment and disposal systems.

**INCI 620. TRATAMIENTO DE AGUA Y DE LAS AGUAS RESIDUALES.** Tres horas crédito. Tres horas de conferencia a la semana. Requisito previo: autorización del Director del Departamento.

Proceso de tratamiento de agua y aguas residuales. Diseño y facilidades para el tratamiento del agua para usos municipales e industriales. Principios del tratamiento de las aguas residuales municipales e industriales. Aplicación de procesos unitarios en el diseño de plantas de tratamiento para cumplir con los requisitos reglamentarios aplicables a los efluentes industriales.

**INCI 620. WATER AND WASTEWATER TREATMENT.** Three credit hours. Three hours of lecture per week. Prerequisite: consent of the Director of the Department.

The process of treating water and wastewater; design of facilities for treatment of water for municipal and industrial use; principles for treatment of municipal and industrial wastewater; application of unitary processes in the design of treatment plants to meet industrial effluents guidelines.

**INCI 622. PLANIFICACION Y MANEJO DE LOS RECURSOS HIDRAULICOS.** Tres horas crédito. Tres horas de conferencia a la semana. Requisito previo: autorización del Director del Departamento.

Normas del Concilio de Recursos Hidráulicos aplicadas al proceso de planificación; estrategia para el manejo de los recursos de agua, tierra y otros relacionados. Se requieren informes orales y escritos.

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**INCI 622. WATER RESOURCES PLANNING AND MANAGEMENT.**  
Three credit hours. Three hours of lecture per week. Prerequisite:  
consent of the Director of the Department.

Standards of the Water Resources Council applied to the  
planning process; strategies for managing water, land and other  
related resources. Oral and written reports will be required.

Y para que así conste, expido y remito la presente a las autoridades  
universitarias correspondientes bajo el Sello de la Universidad de Puerto Rico  
hoy día quince de febrero del año de mil novecientos setenta y ocho, en  
Mayagüez, Puerto Rico.

  
Gloria A. Viscasillas  
Secretaria