



ISO 9001:2015

Thermal Engineering



EXPECTED LEARNING OUTCOMES OF PROGRAMME (PLOs)

General knowledge

PLO 1	Apply natural, social, technical and economic knowledge to solve problems in preservation, processing, testing, and research and development of food products.
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Professional knowledge

PLO 2	Formulate production procedures based on the analysis of technical factors to ensure and enhance product quality
PLO 3	Design quality management systems for processing plants to ensure food hygiene and safety.

Soft-skills

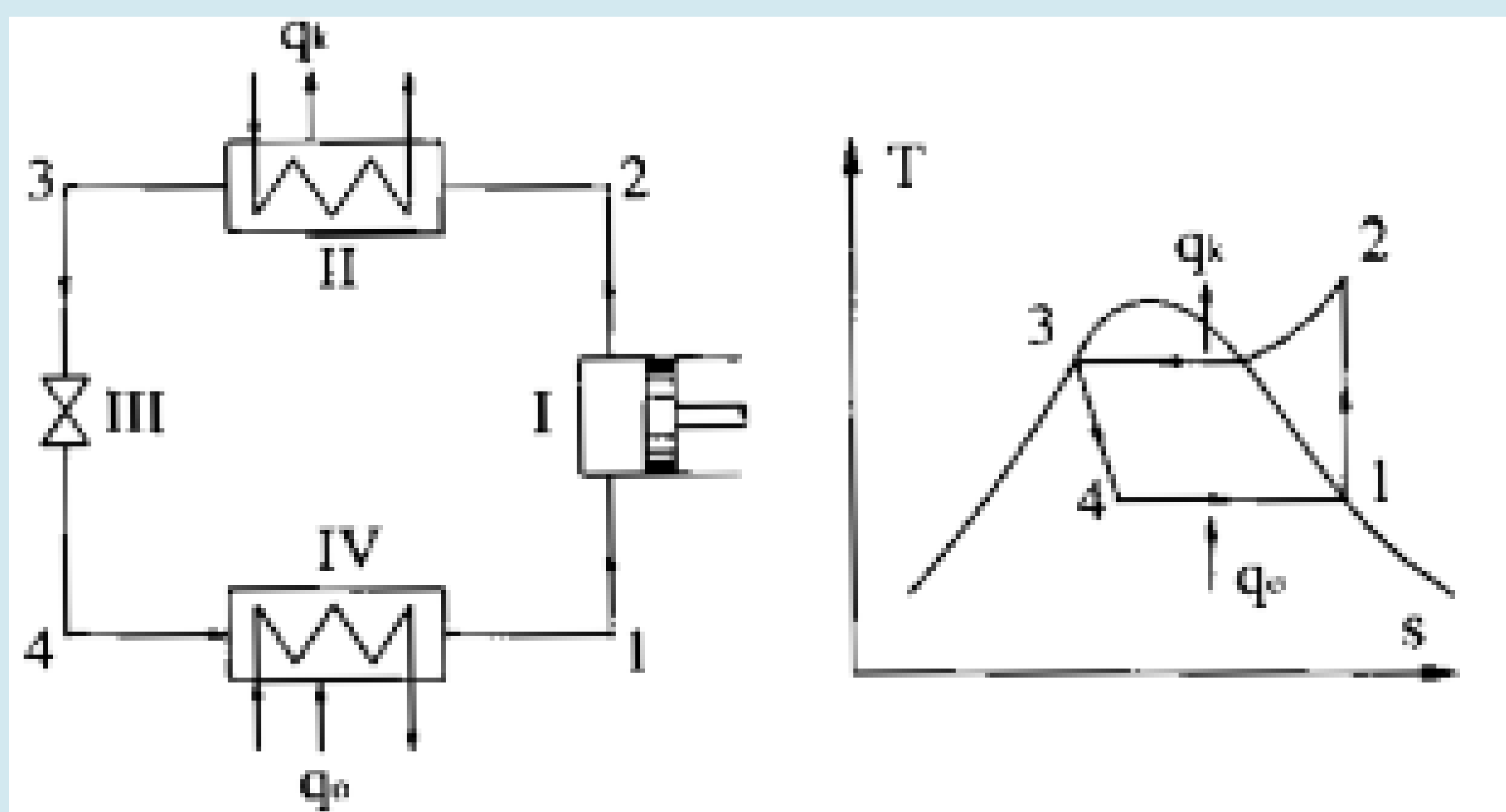
PLO 4	Perform work planning, demonstrate creatively critical thinking, work independently and effectively as a team leader or member
PLO 5	Demonstrate communication skills and use specialized English in food technology.

Professional skills

PLO 6	Operate production equipment in food manufacture factories
PLO 7	Analyse product quality criteria in food preservation and processing procedures.
PLO 8	Design research to address technological and regulatory problems in the food industry through the evaluation of information, scientific data and information technology applications.

Attitude

PLO 9	Work professionally, maintain professional ethics, social responsibility, and demonstrate personal physical development.
PLO 10	Demonstrate the spirit of entrepreneurship and life-long learning



LEARNING CONTENT

- Students read reference materials before coming to class
- Lecturers give presentations using Power point.
- Students interact, exchange group work in class
- Implement homework content on E-learning system.
- Practice on the computer and submit assignments

Course description:

The module helps equip students with basic knowledge about the physical properties of ideal gases, steam, laws of thermodynamics to investigate heat exchange processes and heat exchange modes. At the same time, this subject also contributes to training skills in calculating parameters, properties of steam, heat exchange processes, and cycles. This module helps students practice problem-solving attitude in self-study, responsible work with assigned work.

COURSE CONTENT	CELOs
Chapter 1. General description of thermodynamic processes	CELO 1; 2; 4
Chapter 2. Description of gas cycle	CELO 2; 3; 6
Chapter 3. Describe the process of steam, moist air	CELO 2; 3; 4; 7
Chapter 4. Calculation of heat transfer processes.	CELO 2; 4; 5; 7

	EXPECTED LEARNING OUTCOME OF COURSE (CELOs)	PLOs
Knowledge		
CELO 1	Displayed unit conversion of state parameters	PLO 1
CELO 2	Describe the parameters of an ideal gas and an ideal gas mixture.	PLO 1
CELO 3	Applying the laws of thermodynamics in thermodynamic calculations of thermodynamic processes and cycles	PLO 1; 2
Professional skills		
CELO 4	Calculating heat exchange processes	PLO 6; 8
CELO 5	Analyze and solve thermodynamic problems.	PLO 5; 8
Attitude		
CELO 6	Carrying out serious professional work, the ability to self-research and develop products	PLO 10
CELO 7	Give students flexibility and fast in calculating heat exchange process	PLO 10

LEARNING METHODS	Course assessment	percentage%
Evaluation of the process	learning attitude	10%
	Writing test	20%
	Practice report	20%
End-of-course assessment	Writing test	50%

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LECTURERS

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