Program Tracks and Credit Hours

The Master Degree Program in Water-Food-Energy Nexus is awarded by the Faculty of Graduate Studies at Jordan University of Science and Technology (JUST) upon the fulfillment of the following requirements:

1. Compliance with the master's degree regulations approved by the Dean's Council.
2. Successful Completion of (34) Credits in one of the following tracks:

	Credit Hours	
	Thesis Track	**Comprehensive Track**
Compulsory Requirements	16	25
Elective Requirements	9	9
Thesis	9	-
Total Credit Hours	**34**	**34**

First: Thesis Track

This track requires a successful defense of a Master-Thesis (9-Credit-Hours) that complies with the University Guidelines. In addition, it requires the completion of 25 Credit Hours of Graduate Coursework.

These 34 Credits are distributed as follows:

1. Compulsory Courses Work: 16 Credit Hours.
2. Elective Courses Work: 9 Credit Hours with 3 of them selected from the Nanotechnology package WEF 741-WEF 747 (courses must be approved by the student's supervisor).

Thesis Work: 9 Credit Hours. The thesis topic is in one of the following areas: water, energy, food, nanotechnology, or a combination thereof.

A. Compulsory Courses (16 Credit Hours)

Course Number	Course Title	Credit Hours
WEF 700	Research Seminar in WEF Nexus	1
WEF 701	Introduction to WEF Nexus	3
WEF 710	Water Resources: An Integrated Approach	3
WEF 720	Renewable Energy Systems: Design and Management	3
WEF 730	Food System: Approach and Management	3
WEF 740	Nanotechnology in WEF Nexus	3

B. Elective Courses (9 Credit Hours)

Course Number	Course Title	Credit Hours
WEF 711	Special Topics in WEF Nexus with a concentration on water	3
WEF 721	Special Topics in WEF Nexus with a concentration on Energy	3
WEF 731	Special Topics in WEF Nexus with a concentration on Food	3
WEF 732	Urban Agriculture Production	3
WEF 741	Special Topics in WEF Nexus with a concentration on Nanotechnology	3
WEF 750	Landscape Infrastructure Planning in Arid Environments: WEFE Nexus and Climate Change	3
WEF 743	Nanotechnology Applications in Solar Cells	3
WEF 744	Water Desalination Using Nanotechnology	3
WEF 745	Emerging Nanotechnologies for Energy Harvesting and Storage	3
WEF 746	Nanotechnology in Food Science	3
WEF 747	Sensing Solutions for WEF Systems	3
WEF 733	Food Processing and Preservation	3
WEF 751	Spatial Data Analytics and Technologies: Exploring the Water-Energy-Food WEF Nexus	3
WEF 752	Climate Change and WEF Systems Security	3
WEF 753	Green and Smart Buildings	3

* A student may take no more than 6 credit hours from courses of 700 level offered by other programs related to **WEF NEXUS** upon approval of the Dean of Graduate Studies based on a recommendation from the Graduate Studies Committee at the Nanotechnology Institute.

Thesis (9 Credit Hours)

Course Number	Course Title	Credit Hours
WEF799A	Thesis – 9 Credits	9
WEF799B	Thesis – 6 Credits	6
WEF799C	Thesis – 3 Credits	3
WEF799D	Thesis – 0 Credits	0

Second: Comprehensive Exam Track

This track requires the completion of 34 Credit Hours of graduate coursework. In addition, it requires passing a Comprehensive Exam.

These 34 Credits are distributed as follows:

1. Compulsory Courses Work: 25 Credit Hours.
2. Elective Courses Work: 9 Credit Hours with 3 of them selected from the Nanotechnology package WEF 741-WEF 747 (courses must be approved by the student's supervisor).
3. Comprehensive Exam: 0 Credit Hours.

A. Compulsory Courses (25 Credit Hours)

Course Number	Course Title	Credit Hours
WEF 700	Research Seminar in WEF Nexus	1
WEF 701	Introduction to WEF Nexus	3
WEF 710	Water Resources: An Integrated Approach	3
WEF 720	Renewable Energy Systems: Design and Management	3
WEF 730	Food System: Approach and Management	3
WEF 740	Nanotechnologies in WEF Nexus	3
WEF 750	Landscape Infrastructure Planning in Arid Environments: WEFE Nexus and Climate Change	3
WEF 751	Spatial Data Analytics and Technologies: Exploring the WEF Nexus	3
WEF 752	Climate Change and WEF Systems Security	3

B. Elective Courses (9 Credit Hours)

Course Number	Course Title	Credit Hours
WEF 711	Special Topics in WEF Nexus with a concentration on water	3
WEF 721	Special Topics in WEF Nexus with a concentration on Energy	3
WEF 731	Special Topics in WEF Nexus with a concentration on Food	3
WEF 741	Special Topics in WEF Nexus with a concentration on Nanotechnology	3
WEF 732	Urban Agriculture Production	
WEF 733	Food Processing and Preservation	3
WEF 742	Nanofabrication and Characterization	3
WEF 743	Nanotechnology Applications in Solar Cells	3
WEF 744	Water Desalination Using Nanotechnology	3
WEF 745	Emerging Nanotechnologies for Energy Harvesting and Storage	3
WEF 746	Nanotechnology in Food Science	3
WEF 747	Sensing Solutions for WEF Systems	3
WEF 753	Green and Smart Buildings	3

* A student may take no more than 6 credit hours from courses of 700 level offered by other programs related to **WEF NEXUS** upon approval of the Dean of Graduate Studies based on a recommendation from the Graduate Studies Committee at the Nanotechnology Institute.

C. Passing a Comprehensive Exam (0 Credit Hours)