

## Hydrology and Water Resources Management

Course Title	Course Code	Course Type	Credit Hour
<b>Semester 1</b>			
<u>GEN(NS)</u>		General	<u>3</u>
Functional English	GENG-101	General	<u>3</u>
Civics and Community Engagement	GCCE-101	General	<u>2</u>
Islamic Studies / Ethics (for Non-Muslims)	GISL-101 / GETH-101	General	<u>2</u>
Fundamentals of Groundwater Hydrology	HWRM-102	Major	<u>3</u>
Tarjuma-e-Quran	HQ-001	Compulsory	<u>0</u>
Introduction to Hydrology	HWRM-101	Major	<u>03</u>
			<b>Total Credit Hours 16</b>
<b>Semester 2</b>			
<u>GEN(AH)</u>		General	<u>2</u>
Quantitative Reasoning (I)	GQR-101	General	<u>3</u>
Entrepreneurship	GENT-101	General	<u>2</u>
Ideology and Constitution of Pakistan	GICP-101	General	<u>2</u>
Surveying Techniques for Water Resources Development	HWRM-104	Major	<u>3</u>
Hydrometeorology	HWRM-103	Major	<u>3</u>
Tarjuma-e-Quran	HQ-002	Compulsory	<u>1</u>
			<b>Total Credit Hours 16</b>
<b>Semester 3</b>			
Applications of Information and Communication Technologies	GICT-201	General	<u>3</u>
Expository Writing	GENG-201	General	<u>3</u>
Introduction to Fluid Mechanics	HWRM-203	Major	<u>3</u>
Groundwater Development and Exploration	HWRM-202	Major	<u>3</u>
Irrigation (I)	HWRM-201	Major	<u>3</u>
Tarjuma-e-Quran	HQ-003	Compulsory	<u>0</u>
			<b>Total Credit Hours 15</b>
<b>Semester 4</b>			
<u>GEN(SS)</u>		General	<u>2</u>
Quantitative Reasoning (II)	GQR-202	General	<u>3</u>
Urban Hydrology	HWRM-206	Major	<u>3</u>
Soil and Water Conservation	HWRM-205	Major	<u>3</u>
Surface Water Hydrology	HWRM-204	Major	<u>3</u>
Tarjuma-e-Quran	HQ-004	Compulsory	<u>1</u>
			<b>Total Credit Hours 15</b>
<b>Semester 5</b>			
Hydrochemistry and Pollution Control	HWRM-302	Interdisciplinary	<u>3</u>
Statistical Methods in Hydrology	HWRM-301	Interdisciplinary	<u>3</u>
Applied Climatology	HWRM-305	Major	<u>3</u>
Soil Mechanics	HWRM-304	Major	<u>3</u>
Water Resources System Analysis	HWRM-303	Major	<u>3</u>
Tarjuma-e-Quran	HQ-005	Compulsory	<u>0</u>
Water Resources Laws and Transboundary Issues	HWRM-306	Major	<u>02</u>
			<b>Total Credit Hours 17</b>
<b>Semester 6</b>			
Introduction to GIS and Remote Sensing	HWRM-308	Interdisciplinary	<u>3</u>
Hydro-informatics	HWRM-307	Interdisciplinary	<u>3</u>
Irrigation (II)	HWRM-311	Major	<u>3</u>
Open Channel Hydraulics	HWRM-310	Major	<u>3</u>
Drainage Engineering	HWRM-309	Major	<u>3</u>
Tarjuma-e-Quran	HQ-006	Compulsory	<u>1</u>
Elective (I)	HWRM-312	Major	<u>03</u>
			<b>Total Credit Hours 19</b>
<b>Semester 7</b>			
Fieldwork / Internship		Major	<u>3</u>
Elective (II)	HWRM-404	Major	<u>3</u>
Groundwater Modeling	HWRM-403	Major	<u>3</u>
Watershed Modeling	HWRM-402	Major	<u>3</u>
Advanced Fluid Mechanics	HWRM-401	Major	<u>3</u>
Tarjuma-e-Quran	HQ-007	Compulsory	<u>0</u>
			<b>Total Credit Hours 15</b>
<b>Semester 8</b>			
Capstone Project		Major	<u>3</u>
Elective (IV)	HWRM-408	Major	<u>3</u>
Elective (III)	HWRM-407	Major	<u>3</u>
Sustainable Water Resources Development	HWRM-406	Major	<u>3</u>
Reservoir Operation and Design	HWRM-405	Major	<u>3</u>
Tarjuma-e-Quran	HQ-008	Compulsory	<u>1</u>
			<b>Total Credit Hours 16</b>

Signature