

**NEW NANO ENGINEERING CURRICULUM**

**(INTERNATIONAL PROGRAM)**

**MAJOR: BIOENGINEERING**

<b>FIRST SEMESTER</b>			<b>FIFTH SEMESTER</b>		
2190101	Computer Programming	3	2189341	Materials Characterization	3
2190151	Computer Programming Laboratory	1	2182312*	Signal processing and instrumentation	3
2301107	Calculus I	3	2141355*	Introduction to Bioengineering	3
2140111	Exploring Engineering World	3	2185373	Reaction Engineering	3
2304153	Physics for Engineers	3	2310380*	Biochemistry for Bioengineers	3
2304193	Physics Laboratory for Engineers	1	2310381*	Biochemistry Laboratory for Bioengineers	1
5501112	Communicative English I	3	xxxxxxx	General Education	3
		<b>17</b>			<b>19</b>
<b>SECOND SEMESTER</b>			<b>SIXTH SEMESTER</b>		
2141100*	Introduction to Nanotechnology	3	2184303	Engineering Management	3
2183101	Engineering Graphics	3	2141302*	Nanofabrication Technology	3
2302105	Chemistry for Engineers	3	2185333	Transport Phenomena	3
2302103	General Chemistry Laboratory	1	2141357*	Cells Biology and Human Body	3
2301108	Calculus II	3	2189356*	Material for Biomedical Applications	3
2304154	Physics and Electronics for Engineers	3	xxxxxxx	General Education	3
2304194	Physics and Electronics Laboratory for Engineers	1			<b>18</b>
5501123	Communicative English II	3	<b>SUMER SEMESTER</b>		
		<b>20</b>	2140301	Industrial Training	2
<b>THIRD SEMESTER</b>					<b>2</b>
2182201	Mathematics for Nano – Engineering	3	<b>SEVENTH SEMESTER</b>		
2182210	Electrical Circuit	3	2141498	Nano - Engineering Pre-Project	1
2183211	Engineering Mechanics	4	xxxxxxx	Approved Electives	3
2189202*	Fundamental of Materials Science and Engineering	3	xxxxxxx	Approved Electives	3
2303111	Basic Organic Chemistry	3	xxxxxxx	Approved Electives	3
2185221	Organic Chemistry Laboratory	1	xxxxxxx	Approved Electives	3
5501214	Communication and Presentation Skills	3	xxxxxxx	Free Elective	3
		<b>20</b>			<b>16</b>
<b>FOURTH SEMESTER</b>			<b>EIGHTH SEMESTER</b>		
2141290*	Statistic and Research Methodology for Nano Engineers	3	2141490	Nano Seminar	1
2182213	Electrical Circuit Laboratory	1	2141499	Nano Engineering Project	3
2303111	Biology for Engineers	3	xxxxxxx	Approved Electives	3
2303112	Biology Laboratory for Engineers	1	xxxxxxx	Approved Electives	3
2185222	Physical Chemistry for Nano – Engineering	3	xxxxxxx	Free Elective	3
2302207*	Basic Inorganic Chemistry	2	xxxxxxx	General Education	3
5501225	Technical Writing	3			<b>16</b>
xxxxxxx	General Education	3	<b>TOTAL CREDITS FOR GRADUATION</b>		
		<b>19</b>			<b><u>147</u></b>

\* New Course

**NEW NANO ENGINEERING CURRICULUM****(INTERNATIONAL PROGRAM)****MAJOR: ADVANCED MATERIAL ENGINEERING**

<b>FIRST SEMESTER</b>			<b>FIFTH SEMESTER</b>		
2190101	Computer Programming	3	2189341	Materials Characterization	3
2190151	Computer Programming Laboratory	1	2182312*	Signal processing and instrumentation	3
2301107	Calculus I	3	2141305*	Nanostructures and Crystalline Defects	3
2140111	Exploring Engineering World	3	2185302*	Thermodynamics in Materials Engineering	3
2304153	Physics for Engineers	3	2185379*	Polymer Engineering	3
2304193	Physics Laboratory for Engineers	1	xxxxxx	General Education	3
5501112	Communicative English I	3			<b>18</b>
		<b>17</b>			
<b>SECOND SEMESTER</b>			<b>SIXTH SEMESTER</b>		
2141100*	Introduction to Nanotechnology	3	2184303	Engineering Management	3
2183101	Engineering Graphics	3	2141302*	Nanofabrication Technology	3
2302105	Chemistry for Engineers	3	2185333	Transport Phenomena	3
2302103	General Chemistry Laboratory	1	2189322*	Phase Transformations and Kinetics	3
2301108	Calculus II	3	2189370*	Physical Metallurgy	3
2304154	Physics and Electronics for Engineers	3	xxxxxx	General Education	3
2304194	Physics and Electronics Laboratory for Engineers	1			<b>18</b>
5501123	Communicative English II	3			
		<b>20</b>			
<b>THIRD SEMESTER</b>			<b>SUMER SEMESTER</b>		
2182201	Mathematics for Nano – Engineering	3	2140301	Industrial Training	2
2182210	Electrical Circuit	3			<b>2</b>
2183211	Engineering Mechanics	4	<b>SEVENTH SEMESTER</b>		
2189202*	Fundamental of Materials Science and Engineering	3	2141498	Nano - Engineering Pre-Project	1
2303111	Basic Organic Chemistry	3	2189411	Mechanical Behavior of Materials	3
2185221	Organic Chemistry Laboratory	1	xxxxxx	Approved Electives	3
5501214	Communication and Presentation Skills	3	xxxxxx	Approved Electives	3
		<b>20</b>	xxxxxx	Approved Electives	3
			xxxxxx	Free Elective	3
			xxxxxx	General Education	3
					<b>19</b>
<b>FOURTH SEMESTER</b>			<b>EIGHTH SEMESTER</b>		
2141290*	Statistic and Research Methodology for Nano Engineers	3	2141490	Nano Seminar	1
2182213	Electrical Circuit Laboratory	1	2141499	Nano Engineering Project	3
2303111	Biology for Engineers	3	2189450	Materials Design and Selection	3
2303112	Biology Laboratory for Engineers	1	xxxxxx	General Education	3
2185222	Physical Chemistry for Nano – Engineering	3	xxxxxx	General Education	3
5501225	Technical Writing	3	xxxxxx	Free Elective	3
xxxxxx	General Education	3			<b>16</b>
		<b>17</b>			
					<b>TOTAL CREDITS FOR GRADUATION 147</b>

\* New Course