

# DOCTOR OF PHILOSOPHY IN MATERIALS SCIENCE AND ENGINEERING

## Curriculum Structure

### The PhD Program (Total 60 Cr Hrs)

Curriculum Component	Number of Courses	Total Number Cr Hrs
Core Courses	5	15
Elective courses	4	12
Thesis	1	33
<b>Total:</b>	<b>10</b>	<b>60</b>

### Materials Science and Engineering Thesis Requirement (33 Cr Hrs)

Thesis course	
Course ID	Course Title
DENG 899	PhD Thesis

### Core Required Courses (15 Cr Hrs)

Core Requirements (6 Cr Hrs)	
Course ID	Course Title
DENG 602	Applied Research Methodology
DENG 621	Graduate Seminar
Core Requirements sub-package (9 Cr Hrs)	
DENG 603	Advanced Numerical Analysis
DENG 604	Applied Statistics Techniques
DENG 624	Innovation and Technology Management
DENG 625	Sustainable Development
DENG 626	Modeling and Simulation

### Concentration in Materials Science and Engineering (12 Cr Hrs)

Elective courses	
Course ID	Course Title
MSCE 691	Corrosion Engineering
MSCE 692	Failure Analysis and Prevention
MECH 695	Advanced Physical Metallurgy
MECH 697	Coatings and Surface Engineering
MECH 698	Nanotechnology
MSCE 751	Special Topics I
MSCE 752	Special Topics II

## STUDY PLAN

### FIRST SEMESTER (9Cr Hrs)

Term	Course #	Course Title	Cr Hrs
Fall	DENG 602	Applied Research Methodology	3
	DENG XXX	Core Required Course I	3
	MSCE XXX	Concentration Elective Course I	3
Total			9

### SECOND SEMESTER (9 Cr Hrs)

Term	Course #	Course Title	Cr Hrs
Spring	DENG 621	Graduate Seminar	3
	DENG XXX	Core Required Course II	3
	MSCE XXX	Concentration Elective Course II	3
Total			9

### THIRD SEMESTER (9 Cr Hrs)

Term	Course #	Course Title	Cr Hrs
Fall	DENG XXX	Core Required Course III	3
	MSCE XXX	Concentration Elective Course III	3
	MSCE XXX	Concentration Elective Course IV	3
Total			9

### FOURTH SEMESTER (9 Cr Hrs)

Term	Course #	Course Title	Cr Hrs
Spring	DENG 899	PhD Thesis	9
Total			9

### FIFTH SEMESTER (12 Cr Hrs)

Term	Course #	Course Title	Cr Hrs
Fall	DENG 899	PhD Thesis	12
Total			12

### SIXTH SEMESTER (12 Cr Hrs)

Term	Course #	Course Title	Cr Hrs
Fall	DENG 899	PhD Thesis	12
Total			12