

# LESSON PLAN OF 3<sup>rd</sup> SEMESTER CHEMICAL ENGINEERING DEPARTMENT

<b>Discipline:</b> <b>Chemical</b>	<b>Semester:</b> 3rd	<b>Name of TheTeaching Faculty:</b> M Srinivasan
<b>Subject:</b> <b>Theory-3</b>  <b>Mechanical Operation</b>	<b>No of Days per week</b> <b>Class allotted:</b> 4	<b>NoofWeeks:</b> 15
<b>Week</b>	<b>Class days</b>	<b>Theory/PracticalTopic</b>
1 <sup>st</sup>	1 <sup>st</sup>	Introductiontomechanicaloperation
	2 <sup>nd</sup>	Objectivesof sizedreduction
	3 <sup>rd</sup>	Statelawsof crushinglikeBonds law,Rittinger'slaw,Kick's law
	4 <sup>th</sup>	Practicenumericalrelatedto differentlaws
2 <sup>nd</sup>	1 <sup>st</sup>	ConceptofCrushingefficiency,Workindex
	2 <sup>nd</sup>	Classificationofsizedreductionequipmentandtheirconstructionandoperation
	3 <sup>rd</sup>	ConstructionandworkingofJawcrusher,Gyratorycrusher
	4 <sup>th</sup>	ConstructionandworkingofSmoothrollcrusher,HammerMill,BallMill
3 <sup>rd</sup>	1 <sup>st</sup>	Closedandopencircuitgrinding,drygrinding
	2 <sup>nd</sup>	Definewetgrinding,freeandchokegrinding
	3 <sup>rd</sup>	Practiceofthe chapterandsolvesimpleproblems
	4 <sup>th</sup>	Practicepreviousyearsquestions
4 <sup>th</sup>	1 <sup>st</sup>	Objectivesof sizeseparation
	2 <sup>nd</sup>	Shapeandsizeof irregularparticle
	3 <sup>rd</sup>	Differenttypesofscreenanalysis
	4 <sup>th</sup>	Defineidealscreen&actualscreen
5 <sup>th</sup>	1 <sup>st</sup>	Materialbalanceoverthe screen
	2 <sup>nd</sup>	Constructionandoperationofdifferenttypesofindustrialscreensandtheireffecti veness
	3 <sup>rd</sup>	Constructionandoperationofdifferenttypesofindustrialscreensandtheireffecti veness
	4 <sup>th</sup>	Constructionandoperationofairfilters,airseparator
6 <sup>th</sup>	1 <sup>st</sup>	Constructionandworkingofcyclone separator,magneticandElectromagneticseparation
	2 <sup>nd</sup>	Theoryofsettlinglikefree
	3 <sup>rd</sup>	Hinderedsettling
	4 <sup>th</sup>	StateStroke'slaw,Classification
7 <sup>th</sup>	1 <sup>st</sup>	Solvesimplenumericalbasedonthechapter
	2 <sup>nd</sup>	TheoryonSedimentation,thickeners,clarifiers
	3 <sup>rd</sup>	Theoryonhydraulicclassifiers,jigs,classifierriffltableandtheiruse
	4 <sup>th</sup>	Principle&operationof froth floatationandits use
8 <sup>th</sup>	1 <sup>st</sup>	Revisionofthe chapterandpracticepreviousyearquestion
	2 <sup>nd</sup>	Typesoffiltrations,Theoryoffiltration,
	3 <sup>rd</sup>	Typesofcakes,cakeresistance, pressure drop,filtermedium
	4 <sup>th</sup>	FilterAidsandrelatedderivation
9 <sup>th</sup>	1 <sup>st</sup>	Classification,constructionsandworkingprinciplesoffiltrationequipments,Thic keners
	2 <sup>nd</sup>	Classification,constructionsandworkingprinciplesoffiltrationequipments,Thic keners
	3 <sup>rd</sup>	Batchandcontinuouscentrifugeswiththeir construction,operation
	4 <sup>th</sup>	Usesof batchandcontinuous centrifuges

10 <sup>th</sup>	1 <sup>st</sup>	Flocculation,coagulantsandroleofcoagulantin filtration
	2 <sup>nd</sup>	Practice questionsbasedonthe chapter
	3 <sup>rd</sup>	Doubtclearingclass
	4 <sup>th</sup>	Theoryonmixing
11 <sup>th</sup>	1 <sup>st</sup>	Variousmixingoperations likeMixingofliquidwithliquid
	2 <sup>nd</sup>	Mixingofliquidwith solid
	3 <sup>rd</sup>	Mixingofviscousmaterials
	4 <sup>th</sup>	MixingofSolidwith solid
12 <sup>th</sup>	1 <sup>st</sup>	Mixingofgaseswithliquids
	2 <sup>nd</sup>	Theflow patterninagitatedvessel
	3 <sup>rd</sup>	Methodsofpreventionofswirlingandvortexformation,baffling
	4 <sup>th</sup>	Differentimpellersused inmixingoperation
13 <sup>th</sup>	1 <sup>st</sup>	Differentpropellers,paddles usedinmixingoperation
	2 <sup>nd</sup>	Revisionofthechapterandpracticedifferentquestions
	3 <sup>rd</sup>	Introductionto transportationandstorage
	4 <sup>th</sup>	Objectivesoftransportationandstorage
14 <sup>th</sup>	1 <sup>st</sup>	Transportationofsolidbybeltconveyor
	2 <sup>nd</sup>	apronconveyor,screwConveyor
	3 <sup>rd</sup>	bucketelevators, scrapersandpneumaticconveyers
	4 <sup>th</sup>	Storageandhandlingofsolids
15 <sup>th</sup>	1 <sup>st</sup>	constructionandusesof silosandbins
	2 <sup>nd</sup>	Revisionof the chapters
	3 <sup>rd</sup>	Doubtclearingclass
	4 <sup>th</sup>	Practice questionanswer