Category:   Defense   Lecture-Tutorial- Practical:   3.1.     Course Type:   20ES1301-Construction Materials & Concrete Technology   Semester End Evaluation:   300     Prerequisites:   20ES1301-Construction Materials & Concrete Technology   Total Marks:   100     Course Outcomes   Total Marks:   100     Upon successful completion of the course, the student will be able to:   KZ     CO1   Discuss the concrete ingredients and its influence at gaining strength.   KZ     CO2   Design of concrete mix and grade as per IS codes.   KZ     CO3   Summarise the concepts of conventional concrete and its differences with other concretes like no fines.   KZ     CO4   Describe the application and use of fiber reinforced concrete.   KZ     CO5   Design and develop the self-compacting and high performance concrete.   KZ     CO3   3   3   2   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   2   3   3   2   2   2															
Branches   Cc.   Credis:   4     Course Type:   Theory   Letture-Tutorial   3.1     Prerequisites:   20ES1301-Construction Materials & Concrete Technology   Semester End Evaluation:   30     Prerequisites:   20ES1301-Construction Materials & Concrete Technology   Total Marks:   10     Course Outcomes   Upon successful completion of the course, the student will be able to:   Total Marks:   10     CO1   Discuss the concrete ingradients and its influence at gaining strength.   K2   K2     CO2   Design of concrete mix and grade as prI S codes.   K2     CO3   Summarise the concrets for conventional concrete and its differences with other concretes.   K2     CO4   Describe the application and use of fiber reinforced concrete.   K2     CO3   Design of develop the self-compacting and high performance concrete.   K2     CO4   Describe the application and use of fiber reinforced concrete.   K2     CO4   Design of develop the self-compacting and high performance concrete.   K2     CO4   2   2   2   2   2   3   2   2   2   3   2   2   2   2   2   2															
Category:   HONORS   Credits:   4     Course Type:   Theory   Leture-Tutorial- Practical:   3.1     Prerequisites:   20ES1301-Construction Materials & Concrete Technology   Semester End Semester End Volumation:   300     Course Outcomes   Evaluation:   Semester End Volumation:   700     CO1   Discuss the concrete ingredients and its influence at gaining strength.   KK     CO2   Design of concrete mix and grade as per IS codes.   KK     CO3   light weight etc.   KK     CO4   Descripte the application and use of fiber reinforced concrete.   KK     CO5   Design of concrete mix and grade as per IS codes.   KK     CO4   Descripte the application and use of fiber reinforced concrete.   KK     CO5   Design and develop the self-compacting and high performance concrete.   KK     CO1   2   2   2   2   2   3   3   2   2   2   3   2   2   2   3   2   2   2   3   2   2   2   3   2   2   2   3   2   2   2   3   3   2 </th <th></th> <th colspan="12">CE</th> <th></th>		CE													
Course Type: Ineory Practical: S-1- Continuous   Prerequisites: 20ES1301-Construction Materials & Concrete Technology Continuous Evaluation: 3c   Prerequisites: 20ES1301-Construction Materials & Concrete Technology Semester End Evaluation: 7c   Course Outcomes Upon successful completion of the course, the student will be able to: Total Marks: 10   CO1 Discuss the concrete ingredients and its influence at gaining strength. Ki Ki   CO2 Design of concrete mix and grade as per IS codes. Ki Ki   CO3 Summarise the concepts of conventional concrete and its differences with other concretes like no fines. Ki   CO4 Deseribe the application and use of fiber reinforced concrete. Ki   CO5 Design and develop the self-compacting and high performance concrete. Ki   CO1 2		HONORS Credits:													4
Prerequisites:   20ES1301-Construction Materials & Concrete Technology   Evaluation:   5     Course Outcomes   Total Marks:   10     Upon successful completion of the course, the student will be able to:   CO1   Discuss the concrete ingredients and its influence at gaining strength.   K2     CO2   Design of concrete inix and grade as per IS codes.   K4     CO3   Summarise the concepts of conventional concrete and its differences with other concretes like no fines.   K2     CO4   Description of the self-compacting and high performance concrete.   K4     CO5   Design and develop the self-compacting and high performance concrete.   K4     CO1   2   2   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2 <td< th=""><th>Course Type:</th><th colspan="13">Practical:</th><th>3-1-0</th></td<>	Course Type:	Practical:													3-1-0
Evaluation:   Image: Mail of the construction of the course, the student will be able to:     Upon successful completion of the course, the student will be able to:   10     CO1   Discuss the concrete ingredients and is influence at gaining strength.   KK     CO2   Design of concrete mix and grade as per IS codes.   KK     CO3   Summarise the concrets of conventional concrete and its differences with other concretes like no fines, light weight etc.   KK     CO4   Describe the application and use of fiber reinforced concrete.   KK     CO5   Design and develop the self-compacting and high performance concrete.   KK     CO1   2<		rerequisites: 20ES1301-Construction Materials & Concrete Technology Semester En Evaluation: Evaluation:											30		
Course Outcomes     Upon successful completion of the course, the student will be able to:   CO1   Discuss the concrete ingredients and its influence at gaining strength.   KX     CO2   Design of concrete mix and grade as per IS codes.   KK     CO3   Summarise the concepts of conventional concrete and its differences with other concretes like no fines.   KX     CO4   Describe the application and use of fiber reinforced concrete.   KX     CO5   Design and develop the self-compacting and high performance concrete.   KX     CO1   2   2   2   2   2   2   2   2   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   2   2   2   2   2   2   2   3   2   2   2   3   2   2   2   2   2   2   2   2   2	Prerequisites:											on:	70		
CO1   Discuss the concrete ingredients and its influence at gaining strength.   K2     CO2   Design of concrete mix and grade as per IS codes.   K2     CO3   Summarise the concrets of conventional concrete and its differences with other concretes like no fines, ight weight etc.   K2     CO4   Describe the application and use of fiber reinforced concrete.   K2     CO5   Design and develop the self-compacting and high performance concrete.   K2     CO1   2   2   2   2   2   2   2   2   2   2   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   2   3   3   2   2   2   3   3   2   2   2   2   3   3   2   2   2   2   3   3   2   2   2   2   3   3   3	Course Outcom														
CO2   Design of concrete mix and grade as per IS codes.   K4     CO3   Summarise the concepts of conventional concrete and its differences with other concretes like no fines.   K4     CO3   Describe the application and use of fiber reinforced concrete.   K4     CO4   Describe the application and use of fiber reinforced concrete.   K4     CO5   Design and develop the self-compacting and high performance concrete.   K4     CO1   2   2   2   2   2   2   2     CO1   2   2   2   2   2   2   2   2   3   2   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   3   2   2   2   3   3   2   2   2   3   3   2   2   2   3   3   2   2   2   2   3   3															
CO3     Summarise the concepts of conventional concrete and its differences with other concretes like no fines, light weight etc.     KX       CO4     Describe the application and use of fiber reinforced concrete.     KX       CO5     Design and develop the self-compacting and high performance concrete.     KX       CO1     2     2     2     KX       CO2     2     2     2     2     2     2       CO2     2															K2
CO3   light weight etc.   K2     C04   Describe the application and use of fiber reinforced concrete.   K2     C05   Design and develop the self-compacting and high performance concrete.   K2     C01   2   2   2   2   2   2     C01   2   2   2   2   2   2   2     C02   2   2   2   2   2   2   2   2     C03   3   3   2 <th></th> <th colspan="14"></th>															
CO5   Design and develop the self-compacting and high performance concrete.   K4     Contribution of Course Outcomes towards achievement of Program Outcomes   K4     CO1   2   3   3   3   3   3   3   3   2   2   2	CO3	light weight etc.													
Contribution of Course Outcomes towards achievement of Program Outcomes       PO1     PO2     PO3     PO4     PO5     PO6     PO7     PO8     PO9     PO10     PO11     PO12     PS01     PS02       CO1     2     2     2     2     2     2     2     2     2     2     2     2     2     2     3     3     1     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     2     3     3     2     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3     2     2     2     3     3		Describe the application and use of fiber reinforced concrete.													K2
PO1     PO2     PO3     PO4     PO5     PO6     PO7     PO8     PO9     PO10     PO11     PO12     PS01     PS01       CO1     2     2     2     2     2     2     2     2     2     2     2     2     2     2     2     2     2     3     3     3     3     3     3     3     3     3     2     2     2     3     3     2     2     3     3     2     2     3     3     3     2     2     3     3     3     3     3     2     2     3     3     3     3     2     2     3     3     3     3     3     3     3     3     3     2     2     3															
CO1   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   3   3   3   2   2   3   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   3   3   2   2   2   3   3   2   2   2   2   2   2   2   2   2   2   2   2   2   3   3   1   2   2   2   2   2   2   2   2   2   3   3   1   1   2   2   2   2   2   2   2   2   2   2   2   2   2   2   3   3   1   1   2   2   2   2   2   2   2   2   2   2   2   2   2   3   3   1   1   1   1   1   1															
CO3   3   3   3   2   2   3   3   2     CO4   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   3   3   1   2   2   2   3   3   1   1   2   3   3   1   2   2   3   3   1   1   2   3   3   1   2   2   3   3   1   1   2   3   3   1   1   2   3   3   1   1   2   3   3   1   1   2   3   3   1   1   2   3   3   1   1   2   3   3   1   1   2   3   3   1 </th <th>CO1</th> <th>-</th> <th>-</th> <th></th>	CO1	-	-												
CO4   2   2   2   2   2   2   2   2   2   2   2   2   2   2   3															-
CO5   2   2   2   3   3   1   2   3     Avg.   2 <th2< th="">   2   2   2<!--</th--><th></th><th></th><th>-</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>-</th><th></th></th2<>			-											-	
Avg.   2   2   2   2   2   2   2   2     I-Low   2-Medium   3-High     Course Content     I   Properties of cement, fine aggregate and coarse aggregates, Additives and Admixtures in Concrete, Rheology of Concrete.   CO     II   Manufacturing and methods of concreting, Properties of fresh and hardened concrete, mix design by I.S. method   CO     III   Design and manufacture of normal concrete, Light weight concrete – Cellular concrete – No fines concrete   CO     IV   Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete   CO     Eterning Resources   1. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2nd Edition, Pearson Education, 2010.   2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000															
Course Content     I   Properties of cement, fine aggregate and coarse aggregates, Additives and Admixtures in Concrete, Rheology of Concrete.   CO     II   Manufacturing and methods of concreting, Properties of fresh and hardened concrete, mix design by I.S. method   CO     II   Design and manufacture of normal concrete, Light weight concrete – Cellular concrete – No fines concrete – Aerated & foamed concrete   CO     IV   Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO     I   Learning Resources   CO     I   Shanta Kumar A.R., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010.   CO     2.   Gambhir, M.L., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2009.   Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2009.     Reference Books   1.   https://archive.nptel.ac.in/courses/105/106/105106176/   Latering Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.     1.   https://archive.nptel.ac.in/courses/105/106/105106176/   Latering Concrete//////			2											2	2
I   Properties of cement, fine aggregate and coarse aggregates, Additives and Admixtures in Concrete, Rheology of Concrete.   CO     II   Manufacturing and methods of concreting, Properties of fresh and hardened concrete, mix design by I.S. method   CO     III   Design and manufacture of normal concrete, Light weight concrete – Cellular concrete – No fines concrete – Aerated & foamed concrete   CO     IV   Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO     Learning Resources   I. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010. 2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2009.     Reference Books   1. Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000. 2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.     e- Resources & other digital   1. https://archive.nptel.ac.in/courses/105/106/105106176/		1-	Low			~						3-High			
II   Manufacturing and methods of concreting, Properties of fresh and hardened concrete, mix design by I.S. method   CO:     III   Design and manufacture of normal concrete, Light weight concrete – Cellular concrete – No fines concrete – Aerated & foamed concrete   CO:     IV   Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete   CO:     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO:     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO:     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO:     Text Books   1. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010. 2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Tata McGraw Hill Publishers, New Delhi, 2000. 2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000. 2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.     e- Resources & other digital   1. <a href="https://archive.nptel.ac.in/courses/105/106/105106176/">https://archive.nptel.ac.in/courses/105/106/105106176/</a>	I	Properties of cement, fine aggregate and coarse aggregates, Additives and Admixtures in Concrete,													
III   - Aerated & foamed concrete   CO     IV   Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO     V   Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete   CO     Learning Resources   CO   CO     Text Books   1. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010.   CO     Reference   1. Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2009.   Reference     Books   2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.   Intps://archive.nptel.ac.in/courses/105/106/105106176/	п														
V     Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete     CO       Learning Resources     I. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010. 2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Tata McGraw Hill Publishers, New Delhi, 2009       Reference     1. Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000. 2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.       e- Resources & other digital     1. <a href="https://archive.nptel.ac.in/courses/105/106/105106176/">https://archive.nptel.ac.in/courses/105/106/105106176/</a>	ш														
V     Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete     CO       Learning Resources     I. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010. 2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Tata McGraw Hill Publishers, New Delhi, 2009       Reference     1. Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000. 2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.       e- Resources & other digital     1. <a href="https://archive.nptel.ac.in/courses/105/106/105106176/">https://archive.nptel.ac.in/courses/105/106/105106176/</a>	IV	Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete CO4													
Text Books     1. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010.       2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Tata McGraw Hill Publishers, New Delhi, 2009       Reference Books     1. Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000.       2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.       e- Resources & other digital     1. <u>https://archive.nptel.ac.in/courses/105/106/105106176/</u>	v	Design and	manufact	ture of s	Self con									trength	CO5
Text Books     1. Neville, A.M. and Brookes, J.J., "Concrete Technology", 2 <sup>nd</sup> Edition, Pearson Education, 2010.       2. Gambhir, M.L., "Concrete Technology", 2nd Edition, Tata McGraw Hill Publishers, New Delhi, 2009       Reference Books     1. Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000.       2. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.       e- Resources & other digital     1. <u>https://archive.nptel.ac.in/courses/105/106/105106176/</u>	Learning Resources														
Reference Books     1.     Shanta Kumar A.R., "Concrete Technology", 2nd Edition, Oxford University Press, New Delhi, 2000.       e- Resources & other digital     1. <u>https://archive.nptel.ac.in/courses/105/106/105106176/</u>	1 Neville A M and Brookes I L "Concrete Technology" 2 <sup>nd</sup> Edition Pearson Education 2010														, 2009.
e- Resources & other digital 1. <u>https://archive.nptel.ac.in/courses/105/106/105106176/</u>															
5	& other													,	
	0														
Page <b>261</b> of <b>278</b>															