MECHANICAL ENGINEERING GRADUATE PROGRAM HANDBOOK

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.!!@&, +%70%, 12 I H!#22!$4#-0#1%!+10-%, 1+!, %%-!1&!6%%1!1)%!'#8021 I H!-%1%4 6*, %!1)%*4!'*%2-+!&'!*, 1%4%+1H!#, -!+%2%81!&, %!'#8021 I! 6%6 . %4!#+!#! 6#<&4!54&'%++&4!#, -!#--*1*&, #2!'#8021 I! #+! +05%43*+&4 I! 8&6 6*11%%! 6%6 . %4+=!!()%! 8&6 6*11%%! 60+1! . %! #554&3%-!#, -!#55&*, 1%-! . I! 1)%! >4#-0#1%! "4&$4#6!; *4%81&4=!!K&4! 1)%! 9#+1%4W+! -%$4%%! A*1)!#! 1)%+*+!&51*&, H!#!6#<&4!54&'%++&4!#, -!1A&!8&6 6*11%%!6%6 . %4+!#4%!4%70*4%-=!!K&4!#!")=; =!-%$4%%H!#!6#<&4!54&'%++&4!#, -!#!6*, *6 0 6!&'!'&04!#--*1*&, #2!6%6 . %4+!#4%!4%70*4%-H!&, %!&'!A)*8)!60+1! . %! '4&6!#! -*''%4%, 1!%, $*, %%4*, $! -%5#41 6%, 1!#, -!&, %! '4&6!#, &1)%4! 8&22%$%=!()%!'&4 6#1*&, !&'!1)%!+05%43*+&4 I!8&6 6*11%%!60+1! . %!8&6 52%1%-!-04*, $!1)%!'*4+1!#8#-%6*8! I %#4!&'!?10-I=!!K#*204%!1&!8&6 52 I!A*1)!1)*+!4%70*4%6%, 1!6#I!4%+021!*, !1)%!2&++!&'!'*, #, 8*#2!#*-=!?10-%, 1+!6#I!6#/%!8)#, $%+!1&!1)%!+05%43*+&4 I!8&6 6*11%%!05!0, 1*2!1)%!+%6%+1%4! . %'&4%!1)%!$4#-0#1*&, !+%6%+1%4= !

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?10-%, 1+!A)&!#4%!70#2*'*%-!1&!%, 4&22!*, !+5%8*'*8!$4#-0#1%!8&04+%+!. 01!A)&!-&!, &1!*, 1%, -!1&!A&4/!1&A#4-!#!$4#-0#1%!-%$4%%!6#I!%, 4&22!#+!, &, E-%$4%%!+%%/*, $!+10-%, 1+=!! f &, E-%$4%%!+10-%, 1+!6#I!%, 1%4! 82#++%+!&, !#!+5#8%E#3#*2#. 2%! . #+*+! -04*, $!1)%!'*4+1! A%%/!&'!%#8)!+%6%+1%4! . I! &. 1#*, *, $!1)%!8&, +%, 1! &'!1)%!8&04+%!*, +14081&4!#, -!>4#-0#1%! "4&$4#6!; *4%81&4=!!?10-%, 1+!60+1!6%%1!1)%!54%E4%70*+*1%+!&'!8&04+%+!*, !A)*8)!1)%I!A*+)!1&!%, 4&22=!!N!6#P*6 0 6!YT!)&04+!&'!84%-*1!%#4, %-!#+!#!, &, E-%$4%%!+10-%, 1!6#I!. %!#552*%-!1&!+#1*+'I!9?9:!-%$4%%!4%70*4%6%, 1+=!?10-%, 1+!60+1!%#4, !#!$4#-%!&'!M!&4!. %11%4H!#, -!1)%!8&04+%!60+1!. %!+0*1#. 2%!'&41)%!54&$4#6=!!()*+!14#8/!'&4!%, 1%4*, $!$4#-0#1%!+10-I!)#+!. %%, !'&0, -!%+5%8*#22 I!)%25'02!1&!+10-%, 1+!*, !1)%!*, -0+14 I!A)&!+%%/!+5%8*#2*b%-!14#*, *, $!*, !+5%8*'*%-!#4%#+!&'!$4#-0#1%!*, +14081*&, !. 01!#4%!0, 8%41#*, !#+!1&!504+0*, $!#!-%$4%%=!!?10-%, 1+!A)&!6*++!1)%!-%#-2*, %!'&4!#-6*++*&, !1&!1)%!>4#-0#1%! "4&$4#6!6#I!#2+&!1#/%!8&04+%+!#+!#!, &, E-%$4%%!+%%/*, $!+10-%, 1!A)*2%!1)%*4!#-6*++*&, !1&!1)%!>4#-0#1%! "4&$4#6!*+!. %*, $!%3#20#1%-=!

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N22!-%$4%%E+%%/*, $!$4#-0#1%!+10-%, 1+H!%P820-*, $!+10-%, 1+!#-6*11%-!1&!8#, -*-#8 I H!60+1!. %!%, 4&22%-!*, !#1!2%#+1!&, %!1%46!BK#22H!?54*, $H!?06 6%4F!-04*, $!1)%!54%3*&0+!YZ!6&, 1)+=!!?10-%, 1+!A)&!)#3%!, &1!%, 4&22%-!*, !#, I!&'!1)%!2#+1!1)4%%!1%46+!A*22!. %!-4&55%-!'4&6!1)%*4!-%$4%%!54&$4#6!#, -!8)#, $%-!1&!*, #81*3%=!!?10-%, 1+!6#I!4%#552 I!1&!1)%!W, *3%4+*1 I!. I!+0. 6*11*, $!#!, %A!#552*8#1*&, =!!N552*8#, 1+!A*22!. %!+0. <%81!1&!1)%!#-6*++*&, !84*1%4*#!*, !%''%81!#1!1)#1!1*6%=!!?10-%, 1+!6#I!4%70%+1!%P8%51*&, +!1&!1)*+!5&2*8 I H!'&4!2%$*1*6#1%!#, -!3#2*-!4%#+&, +H!1)4&0$)!1)%*4!;%5#41 6%, 1H!@&22%$%H!#, -!>4#-0#1%!?8)&&2=!G1!*+!1)%!+10-%, 1W+!4%+5&, +*. *2*1 I!1&!#552 I!'&4!$4#-0#1*&, !1)4&0$)!1)%!9%8)#, *8#2!:, $*, %%4*, $!;%5#41 6%, 1!. I!1)%!5&+1%-!@&22%$%!&'!:, $*, %%4*, $!-%#-2*, %=!!?10-%, 1+!60+1!#2+&!+0. 6*1!#!-%'%, +%!#, , &0, 8%6%, 1!1&!1)%!-%5#41 6%, 1!#1!2%#+1!1A&!A%%/+!. %'&4%!1)%!+8)%-02%-!-%'%, +%!-#1%=!>4#-0#1%!+10-%, 1+!60+1!. %!4%$*+1%4%-!'&4!#!6*, *6 0 6!&'!1A&!)&04+!1)%!+%6%+1%4!1)%I!$4#-0#1%=!!

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- M%'&4%!$4#-0#1*,$H!1)%!9?9:!A*1)!1)%+*+!14#8/!+10-%,1+!60+1!54%5#4%!#!1)%+*+!#,-!54%+%,1!*1!1&!1)%!?05%43*+&4I!@&66*11%%=!()%!+10-%,1!60+1!54%+%,1!#!1I5%-!'*,#2!-4#'1!1&!1)%!?05%43*+&4I!@&66*11%%!#,-!>4#-0#1%!N-3*+&4!&,%!A%%/!.%'&4%!1)%!'*,#2!&4#2!%P#6*,#1*&,=!

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- 9?9:!A*1)&01!1)%+*+!14#8/!+10-%,1+!60+1!+0.6*1!1A&!54&<%81!4%5&41+!8&652%1%-!#+!5#41!&'!1)%!:9[!8&04+%A&4/!4%70*4%6%,1!1&!1)%!>4#-0#1%!"4&$4#6!;*4%81&4!-04*,$!1)%!+%6%+1%4!&'!$4#-0#1*&,!'&4!%3#20#1*&,!#,-!#++%++6%,1=!K#*2*,$!1&!4%+5&,-!1&!#!4%70%+1!A*22!54%3%,1!+10-%,1+!'4&6!$4#-0#1*,$=!

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- N22!A&4/!#552*8#.2%!1&!1)%!9#+1%4\+!-%$4%%!4%70*4%6%,1+!60+1!.%!8&652%1%-!A*1)*,!''*3%!I%#4+!'4&6!1)%!1*6%!1)%!+10-%,1!*+!''*4+1!#-6*11%-!*,1&!)*+D)%4!54&$4#6=!!

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- ?10-%,1+!60+1!.%!#-6*11%-!1&!8#,-*-#8I!.%'&4%!1)%I!4%$*+1%4!'&4!-*++%41#1*&,!)&04+=!?%%!1)%!W?K!>4#-0#1%!@#1#2&$!'&4!4%70*4%6%,1+!'&4!#-6*++*&,!1&!8#,-*-#8I=!

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- ()%!+10-%,1!60+1!8&,-081!#,!*,3%+1*$#1*&,!4%+021*,$!*,!#,!&4*$*,#2!#,-!+*$,*'*8#,1!8&,14*.01*&,!1&!1)%!/,&A2%-$%!*,!1)%!8)&+%,!'*%2-!&'!4%+%#48)=!!?10-%,1+!*,!1)%!")=;=!54&$4#6!60+1!1#/%!#!6*,*6066!&'!ZR!)&04+!&'!-&81&4#2!-*++%41#1*&,!84%-*1+=!

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- L,8%!#-6*11%-!1&!8#,-*-#8IH!+10-%,1+!60+1!%,4&22!'&4!#!6*,*6066!&'!Z!84%-*1!)&04+!%#8)!+%6%+1%4!&'!1)%!#8#-%6*8!I%#4!0,1*2!8&652%1*&,!&'!1)%!54&$4#6=!

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- M%'&4%!$4#-0#1*,$H!1)%!")=;=!+10-%,1+!60+1!54%5#4%!#!-*++%41#1*&,!#,-!54%+%,1!*1!1&!1)%!?05%43*+&4I!@&66*11%%=!()%!+10-%,1!60+1!54%+%,1!#!1I5%-!'*,#2!-4#'1!1&!1)%!?05%43*+&4I!@&66*11%%!#,-!>4#-0#1%!N-3*+&4!1A&!A%%/+!.%'&4%!1)%!'*,#2!&4#2!%P#6*,#1*&,=!

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- N22!A&4/!#552*8#.2%!1&!1)%!")=;=!4%70*4%6%,1+!60+1!.%!8&652%1%-!A*1)*,!+%3%,!I%#4+!'4&6!1)%!1*6%!1)%!+10-%,1!*+!''*4+1!#-6*11%-!*,1&!)*+D)%4!54&$4#6=!

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D !B"4&'%++&4D@)#*4F!")=;=C!@2%6+&,!W,*3%4+*1I H!Y]`X\!O%)#.*2*1#1*&,!O&.&1*8+\! "4&+1)%1*8+!O,-!L41)&1*8+\!OI,#6*8!?I+1%6+!#,-!@&,14&2+\!-0.%I h0+'=%-0!

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N D -E ! BN++*+1#,1! "4&'%++&4F! ")=;=C! W,*3%4+*1I! &'! @#2*'&4,*#H! M%4/%2%IH! ZRYQ\! 9#,0'#8104*,$H! ?6#41! #,-! ?0+1#*,#.2%! ?I+1%6+H! ;#1#E;4*3%,! 9&-%2*,$\! ,#,8I-Y h0+'=%-O!!

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J G BG,+14O81&4!GGF!")=;=C!d*4$*,*#!(%8)H!ZRYY\! J06#,EO&.&1!@&22#.&4#1*3%! ?I+1%6+H! @&EO&.&1*8+! (%8),&2&$I!'&4! f&,E(4#-*1*&,#2! "&502#1*&,+H! ?(:9!:-08#1*&,H! ?%,+&4!"%48%51*&,\!$#*,O+< h0+'=%-0=!

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N G ! BN++&8*#1%! "4&'%++&4F! ")=;=C! >%&4$*#! G,+1*1O1%! &'! (%8),&2&$IH! ZRRS\! M*&O#1%4*#2+!#O-!(O+O0%!:,$*,%%4*,$\!,$#22#,1 h0+'=%-0!

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M G !BG,+14O81&4!GF!")=;=C!M&+1&,!W,*3%4+*1IH!ZRY`\! f#,&+O#2%!J%#O(4#,+'O4!#,-!?&2*-!9%8)#,*8+\!6$&,*4&-4*$& h0+'=%-0!

G ! BN++&8*#1%! "4&'%++&4D>4#-0#1%! "4&$4#6! ;*4%81&4F! ")=;=C! >%&4$*#! G,+1*1O1%! &'! (%8),&2&$IH! ZRR`\! 9*84&'20*-*8+H! N8&0+1*8+H! :,$*,%%4*,$! :-08#1*&,\! $O2-*/%O h0+'=%-O

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D P. H ! B"4&'%++&4F! ")=;=C!

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