

COURSE OUTLINE FALL 2024

C :	
C C :	H100
T & L :	O : 8 9 . . E /5-6 . .
C C :	D . DO .D., M. .
I /T	D . DO .D., M. .
A :	
E :	@
ZOOM L :	:// - . /4301051742
O H :	B
O L :	O

E :

	PERCENT	TEST DATE / DUE DATE
P	10%	O -G
M Q	10%	16
A	10%	C
M T	30%	O 17, 2024
F E	40%	D 5, 2024

P

Course Description:

4056,1'1&5!+=4 2BCC@!,6! (/O.##D<.#: ,/E!BFDG##H!,%/ .1 :)</1.5!<1) .6#!/O (/!G,"! ; .1- , : #!6/) : #%/6!G,/O!
(!61' , : !<1.#!11) % : (/ ,1%!,%!* (6,<! (% : ! (; ; ',# : ! ; 056,1'1&5!J0#!<1) .6#!G,"!#3 ; 0(6,K#!<',%,<(!
; 056,1'1&5!,%<') : ,%&! 3#<0 (% ,6 3 6! *5!G0,<0!<#'6! (% : !/,66) #6!1!//O#! *1 : 5!1 ; #. (/#!/1! 3 (,%/ (,%!
01 3 #16/(,6E! (% : !/O#! ,%/#&. (/ , -#!!) %</ ,1%6!1!//O#! 3 (L1 .!656/# 3 6!1!//O#!) 3 (%! *1 : 5! ,%#0# (/O! (% : !
: ,6# (6#A!
!
J0#! (; ; '< (/ ,1%!1! ; 056,1'1&5!!) % : (3#%/ ('6!/1!% (/) .1 ; (/O,<! 3# : ,<,%#!,6!,%/#&. (/# : !/O.1) &01) /!//O#!
<1) .6#E! ; .1- , : ,%&!6/) : #%/6!G,/O! (!) % ,M) #!1 ; ; 1./) % ,/5!/1!# (.%! ; 056,1'1&5!G,/O,%!//O#!<1%/#N!1!
% (/) .1 ; (/O,<! 3# : ,<,%#A!

Course Outcomes:

On completion of the course the student will be expect to:

- "# 3 1%6/ . (/#!H%1G'# : &#!1!1! .& (%!656/# 3 6!!) %</ ,1%!
0! "# 3 1%6/ . (/#!H%1G'# : &#!1!1!<#')' (.!!) %</ ,1%!
0! "# 3 1%6/ . (/#!O#! (* , /5!/1! ,%/#&. (/#! ; 056,1'1&5!.1 3 !/O#!<#')' (.!(% : ! 3 1'#<)' (.!#-#'/1!//O#!1.& (%!
656/# 3 !!
0! ?!#</ , -# '5! .# (: ! (% : !<1 3 3) % ,< (/#!6< ,#%/ , !< ! ,%#1 . 3 (/ ,1%!
0! 8 ; ; '5!) % : #.6/ (% : ,%&!1! ; 056,1'1& ,< (! ; .1<#66#6!,%!/O#!<' ,% ,< (!'6#//,%&!
!

Pedagogy:

J0#!<1) .6#!,6! : #' , -# .# : ! ,% ! (! * '%% : # : ! '# (.% ,%&!6/5'#!G0,<0!<1 3 * ,%#6!1% ,%#6# 'ID6/) : 5! 3 1 :) '#6!G,/O!
G##H'5! , -# ! ,%/# . (</ , -# !1% ,%#!/) /1 . , ('!6#66,1%6!.1 3 !>7CC!D!P! ; A 3 A! ? + J =1%#!# - #% ,%&! ; # .!G##H@!G,/O!
/O#!<1) .6#! ,%6/ .) </1 .A!

Evaluation:

J0#! ; (66,%&!&. (: #!,6!QCRE! (% : !#- (') (/ ,1%6\$ (66#66 3 #%/6!G,"!<1%6,6/!1!1%#M) ,K! ; #. ! 3 1 :) '#!
=BCR@E! ; (./ ,< ; (/ ,1%!=BCR @E!6#-# . (! (66,%& 3 #%/6!=BCR @E!1%#! 3 , : /# . 3 !/#6/=TCR @! / (H#%!1% ,%#E! (% : !
(! ,% (!#N (3 !=FCR @! ,% - ,& ' (/# : !- , /) (''5!/O.1) &0! ?N (3 ,/5A!9!/ ,6!/O#!6/) : #%/6! .#6 ; 1%6 , * , /5!/1! .#&,6/# .!
!1. !/O#! 3 , : /# . 3 !/#6! (% : ! ,% (!#N (3 A!!
!

SPH100 – Physiology
!

Lecture Schedule
!

VH! " (/#!

J1;,<!

W1:)'#6!

**SPH100 - Physiology
Session Learning Outcomes**

!

Week 1

Deadline: Post a brief introduction on "Please introduce yourself" forum before the start of the tutorial.

Introduction to SPH100 Physiology Course

^5!/0#!#% : !1!|/0,6!6#66,1%E!/0#!6/) : #%/!G, '! * #! (* '#!/17!
! [(-, & (#!W11 : '#!+42BCC!<1) .6#!60#"! (% : !Z1" (* 1. (/,-#!866,& 3 #%/! ; .1&. (36!
! " ,6<)66! ; ' (& (.,63!
! \$% : #.6/ (% : !<1) .6#!.#M) ,.#3 #%/E!,%<') : ,%&!/#N/*11H!.# (: ,%&6E!#- (') (/ ,1%6! (% : !
: # (: ', % #6
! ^#&,%!<13 ; '#/,1%!1!|W1 :) '#6!B!!

!

!

Week 2

Deadline: Complete Modules 1 and 2 before the start of the tutorial.

Module 1 and 2: Cells and Tissues, and Communication, Integration and Homeostasis

^5!/0#!#% : !1!|/0,6!6#66,1%E!/0#!6/) : #%/!G, '! * #! (* '#!/17!
! [(3#! (% : ! : #6<., * #!/0#! 3 (L1.!*1 : 5!< (-, /, #6! (% : !<13 ; (./3 #%/6A!
! ?N ; ' (%!/0#!|1) .!3 (L1.!|) %<, 1%6!1!|/0#!<#"! 3#3 * . (%#A!
! " . (G! (% : !' (* '#!/0#!|) , : !3 16 (,<3 1 : #!1!|/0#!<#"! 3#3 * . (%#! (% : ! : #6<., * #!/0#!
|) %<, 1%6!1!|# (<0!<13 ; 1%#%/A!
! Z13 ; (.#! (! ; 016 ; 01' , ; ; ! * , ' (5# .! /1! (!3 , <# '#! (% : ! (! ; , 161 3 #A!
! W (; !/0#!1.& (% , K (/ , 1%!1!| (!/5 ; , < (' (% , 3 ('<# 'A!
! " . (GE! (% 3#E! (% : !' , 6!/0#!|) %<, 1%6!1!|1.& (% #' #6!|1) % : ! , %! (% , 3 ('<# '6A!
! Z13 ; (.#!/0#!6/.) </) .#6! (% : !|) %<, 1%6!1!|/0#!/0.##!| (3 , #6!1!|<5/1 ; ' (63 , <! ; .1/# , %!
| , * #. 6A!
! Z13 ; (.#! (% : !<1%/. (6!< , ' (! (% : !|' (&# ' (A!
! "#6<., * #! , -#! 3 (L1.!|) %<, 1%6!1!|/0#!<5/16H# #/1%A!
! [(3#!/0#!/0.##! 3 1/1. ! ; .1/# , %6! (% : !#N ; ' (%!/0# , .!|) %<, 1%6A!
! "#6<., * #!/0#!1.& (% , K (/ , 1%! (% : !|) %<, 1%6!1!|/0#!%) <#) 6A!
! ?N ; ' (%!01G! ; .1/# , %!65%/0#6,6!) 6#6!<13 ; (./3 #%/ (/ , 1%!/1/16# ; (. (/#! : , !|# .#%/16# ; 6!1!
/0#! ; .1<#66A!
! "#6<., * #!/0#!6/.) </) .#! (% : !|) %<, 1%6!1!|#N/ . (<# ') (.!3 (/ , NA!
! "#6<., * #!/0#!.1#!1!| ; .1/# , %6! , %!/0#!/0.##! 3 (L1.!< (/ #&1 , #6!1!|<#"!|) %<, 1%6A!
! Z13 ; (.#!/0#!6/.) </) .#6! (% : !|) %<, 1%6!1!|/0#!|1) .! / , 66) #!/5 ; #6A!
! "#6<., * #!/0#! (% /1 35! (% : !|) %<, 1%6!1!|/0#!| , -#!|) %<, 1% ('< (/ #&1 , #6!1!| ; /0# , (A!
! Z13 ; (.#!/0#! (% /1 35! (% : !|) %<, 1%6!1!|/0#!6#-#%! 3 (, %!< (/ #&1 , #6!1!|<1%#%< , -#!
/ , 66) #A!
! \$#6!6/.) </) . ('! (% : !|) %<, 1% ('! : , !|# .#%<#6!/1! : , 6/ , %&) , 60! * #/G##%!/0#!/0.##!/5 ; #6!1!
3) 6<# / , 66) #A!
! "#6<., * #!/0#!6/.) </) . ('! (% : !|) %<, 1% ('! : , !|# .#%<#6! * #/G##%!/0#!/G1!/5 ; #6!1!|%) . ('!
/ , 66) #A!
! ?N ; ' (%!/0#! : , !|# .#%<#6! * #/G##%! (; 1 ; /16,6! (% : !%#<.16,6A!
! " , 6/ , %&) , 60! * #/G##%! ; ') . , ; 1/#%/E! 3) ' / , ; 1/#%/E! (% : !/1/ , ; 1/#%/16/#3!<# '6A!
! c,6! (6!3 (%5!1.& (%6! (6!51) !< (%!|1 .!# (<0!1!|/0#!BC! ; 056,1'1& , < ('!1.& (%!656/#36A!

! "#6<., *#!/0.###!11. 36!1!!'1<('!<13 3)%,<(/,1%!(%:!/G1!!1. 36!1!!'1%&D:,6/(%<#!<13 3)%,<(/,1%A!

! ?N;'(%!/0#!&#%#.#('!6#M)#%<#!1!!#-#%/6!/0(/!1"1G!';1;0,'<!,&(%:!*%,:%&!/1!%,/(<#')'(!.#<#;/1.6A!

D

6

N

E

L

D

A 6

E

L C

L

C

, , ,
- , - , 6
6 , ,
6 , ,
. H , , ?

Modules 4 and 5: Neurons: Cellular and Network Properties & The Central Nervous System

^5!/0#!#% : !1!/0,6!6#66,1%E!/0#!6/) : #%/!G, '!*#! (*'#!/1!

```
! W ( ; !/0#!1.& (%K(/,1%!1!/0#!%#.-1)6!656/#3!,%!: #/ ('A!  
! " . (G! (% : ! : #6<., *#!/0#! ; ( ./6!1! (!%#).1%! (% : !&,-#!/0#,.!!)%</,1%6A!  
! "#6<., *#!/0#! ; ( ./6!1! (!65% ( ; 6#! (% : !/0#,.!!)%</,1%6A!  
! [ ( 3#!/0#!/5 ; #6! (% : !!)%</,1%6!1!&' ('!<#'6A!  
! ?N ; ' (%!,%!G1. : 6!01G!/0#! ` 1' : 3 (%D21 : &H,%Da (/K!#M) (/ ,1%! .# (/#6!/1!/0#!3#3* . (%#!
```


! "#6<., *#!/0#!6/.)</).#!(%:!6#<.#/,1%6!1!//0#!(:.##%('!3#:)") (A!
! "#6<., *#!/0#!6/.)</).#!1!//0#!%#).13)6<)'(.!L)%</,1%A!
! Z13 ; (#!/0#!(%(/135E!%#).1/.(%63,/#.6!(%:!.#<#;/1.6!1!//0#!613(/,<!31/1.E!
653 ; (/0#/,<E!(%:!. ; (.653 ; (/0#/,<!:-,6,1%6A!
! ".(G!(%:!'(*#!'(16#.,#6!1!:. ; (&.(36!/1!601G!/0#!: ,ll#.##%/'#-#6!1!1.&(%K(/,1%1!1!
6H#'#/'!3)6<'#A!
! ", (&.(3!/0#!6', :,%&!l,'(3#%/!/0#1.5!1!<1%/.(</,1%A!
! ", (&.(3!/0#!31'#<)'(.!#-#%/6!1!#N</(/,1%D<1%/.(</,1%<1) ; ',%&!(%:!/0#!<1%/.(</,#!
<5<'#A!
! ",6<)66!/0#!: ,ll#.##%/! ; 166, *#!<()6#6!1!.!3)6<'#!(/,&)#A!
! ",6<)66!/0#!: ,ll#.##%<#6!*#/G##%!'6'1GD/G,/<0!l, *#.6E!(6/D/G,/<0!1N, : (/,-#D&'5<1'5/,<!
l,*#.6E!(%:!!(6/D/G,/<0!&'5<1'5/,<!l,*#.6A!
! ?N;'(%!01G!3)6<'#!'#%&/0!,%!)#%<#6!1.1.<#!1!<1%/.(</,1%A!
D
D
6
C
D
D

! ",6/,%&),60!*#/G##%!0#3 16/(6,6!(%:!<1(&)'(/,1%A!!
!

! V .,/#!/O#!<O# 3,<('!.#(</,1%!1!.!/O#!<1%-#.6,1%!1!!Z \ Y!/1!2 Z \ T!d!E!,%<') :,%&!/O#!
#%K53 #!/O (/!(/'5K#6!/O#!.#(</,1%A!!
! W(;!/O#!.(%6;1./!1!<(. * 1%!: ,1N, : #!,%!(./#.,('!(%: !-#%1)6!*'11 : E!,%<') :,%&!/O#!
#N<O(%!1!!Z \ Y!*#/#G##%/O#!*'11 :!(%: !/O#!(' -#1',!1.!<#"6A!!
! W(;!/O#!.#!'#N!<1%/ .1!1!!-#%/,'(/,1%!,%<') :,%&! (; ; .1 ; ., (/#!%#) .1/. (%63 ,/#.6!(%: !/O#,.!
.#<# ;/1.6A!!
! ", (&. (3!/O#!<) ..#%/! 3 1 : #'!1!.!/O#!* . (%6/# 3!%#) . ('!%/G1.H6!/O (/!<1%/ .1!* .# (/O,%&A!!
! ?N;' (%!/O#! 3 #<O (% ,6 3 6! *5!G0,<O!<#%/ . ('!(%: !; #.,; 0#. ('!<O# 3 1.#<# ;/1.6! 3 1%,/1.!
Z \ Y!(%: !\ Y!'#-#6A!
! " #6<., *#!/O#!; .1/#<,-#!.#!'#N#6!/O (/!&) (. :!/O#!') %&6A!

!

Week 11 The Kidneys

^5!/O#!#% : !1!!/O,6!6#66,1%E!/O#!6/) : #%/!G,!'! *#! (*'#!/17!

! c,6/!(%: !: #6<., *#!/O#!6,N!!)%<,1%6!1!!/O#!H, : %56A!!
! J. (<#!/O#! (% (/1 3,<('!; (/O!1!!(!: .1 ; !1!!G (/#.!! .1 3!^1G 3 (%!6!< (; 6) #'!/1!) .,%#!'# (-,%&! /O#!* 1 : 5A!!
! J. (<#!/O#! (% (/1 3,<('!; (/O!1!!(!: .1 ; !1!!*'11 : !!.1 3!/O#!.#% ('! ./#.5!/1!/O#!.#% ('!-#,%A!!
! ", (&. (3!/O#! (% (/1 3,<('!.#'(/,1%60, ; !*#/#G##%/O#!- (6<)' (! (%: !/) *' (!.#' # 3 #%/6!1!! /O#!%# ; 0.1%A!!
! " #6<., *#!/O#!/O.##! ; .1<#66#6!1!!/O#!%# ; 0.1%A!!
! ", (&. (3!/O#!-1') 3 #!(%: !16 3 1' (./,5!<O (%!1!!,'. (/#! (6!,/! ; (66#6!/O.1) &O!# (<O! 6#</,1%1!!/O#!%# ; 0.1%A!!
! " #6<., *#!/O#!!,/ . (/ ,1%!* (..#.6! *#/#G##%/O#!*'11 :!(%: !/O#!') 3 #%!1!!/O#!%# ; 0.1%E! (%: ! #N;' (%!01G!/O#5!<(%!*#! 3 1 : ,!# : !/1!<1%/ .1!!,'. (/ ,1%A! " #6<., *#!/O#!; .#66) .#6!/O (/ ; .1 3 1/#! (%: !1 ; ; 16#!&'1 3 #.)' (!,./ . (/ ,1%A!!
! "#1,%#!&'1 3 #.)' (!,./ . (/ ,1%!. (/#! (%: !&, -#! (-#. (&#!- (')#6!1!.! ` _bA!!
! ?N;' (%!01G! ` _b!<(%!*#!,%!)#%<# : !*5!'1<('!(%: !.#!'#N!<1%/ .1! 3 #<O (% ,6 3 6A!!
! " ,6/,%& ,60!*#/#G##%/ . (%6<#')' (!./ . (%6; 1./ (%: !; (. (<#')' (!.; (/OG (56A!!
! " #6<., *#! (%: !&, -#!'#N (3 ; '#6!1!! (</, -#! (%: !; (66, -#!.# (*61. ; /,1%,!/O#!; .1N, 3 (' /) *)#A!!
! \$6,%&!&'<16#! (6! (%!#N (3 ; '#E!<.# (/#!&. (; 06!/1!601G!!,'. (/ ,1%E!/. (%6; 1./! 3 (N, 3) 3 E! (%: !.#% ('!O.#601' : !1!! (!6) *6/ (%<#!.# (*61. *# : !*5! ; .1/#,%D 3 # : , (/# : !/ . (%6; 1./A!!
! ?N;' (%! (%: !&, -#!'#N (3 ; '#6!1!!/O#!, 3 ; 1./ (%<#!1!!/) *' (!.16#<.#/,1%,%!.#% ('!)%</,1%A!!
! ?N;' (%! 3 (/O# 3 (/,<('5! (%: !,%!G1. : 6!/O#!.#' (/ ,1%60, ; !*#/#G##%/O#!#N<.#/,1%1!! (! 61')#! (%: !,/6!.#% ('!<# (. (%<#A!!
! ?N;' (%!01G!<# (. (%<#!< (%!*#!)6# : ! (6! (%!,%: .#</!,%: < (/1.1!!!.#% ('!O (%: !,%&!1!! (! 61')#A!!
! ", (&. (3!/O#!,%-1')%/(.5! 3,</) .,/,1%! .#!'#N!

!

Week 12 The Digestive System & Metabolism and Energy

^5!/O#!#% : !1!!/O,6!6#66,1%E!/O#!6/) : #%/!G,!'! *#! (*'#!/17!

! J. (<#! (! ; #<#!1!!)% : ,/# : !!11 : !!.1 3! 3 1)/O!/1 (%) 6A!!

! ?N; '(,%!/0#!<0(''%!1!()/1 :,/,1%E! 3 (66!* ('(%<#E!(%:!: #l#%6#A! "#6<., *#!(%:!
<13 ; (.#!6#<.#/,1%E! :,/,1%E! (*61.;/,1%E!(%: !3 1/,/5A!!
! "#6<., *#!6,%&'#D)%,/!6 3 11/0! 3)6<'#E!6'1G!G (-#!; 1/#%/, ('6E!/1%,<!(%: !; 0(6,<!
<1%/. (</,1%6A!!

!

Week 13

Reproduction and Development & Review

^5!/0#!#% :!1!!/0,6!6#66,1%!/0#!6/) :#%/!G,!!*#!(*'#!/17!

```
! "#6<.,*#!/0#!.1#!1!6#N!<0.131613#6!,%!6#N!:#/#.3,%(/,1%A!!
! "#6<.,*#!/0#!*,;1/#%/,('!.#;.1:)</,-#!6/.)</).#6!1!/0#!#('5!#3*.51A!!
! ",(&.(3!/0#!;.1<#66#6!1!6#N)('!.!#.#%/,(/,1%!,%!3('#!(%:!#3('#!#3*.51%,<!
: #-#'1;3#%/A!!
! "#6<.,*#!(%:!<13;(.#!3('#!(%:!#3('#!;(/#. %6!1!&(3#/1&#%#6,6A!!
! ",(&.(3!/0#!<1331%!01.31%('!<1%/!1!(%:!#:#*(<H!;(OG(56!1!.!.#;.1:)</,-#!
l)%</,1%A!!
! ?N;'(%!/0#!6,&%,l,<(%<#!1!;)'6(/,'#!`%b2!6#<.#/,1%A
```