Introduction to Differential Equations
Tentative Due Dates Spring 2017
2280-2 12:55 PM in LCB 219

Questions: 801-581-6879, Office: 113 JWB. Email `ggustaf@math.utah.edu`

HW 1, Due Week 2
1.1: 1, 4, 5, 6, 9, 15, 19, 27, 29, 30, 32, 33, 34
    Reading. Required background. Nothing graded from 1.1.
1.2: 1, 2 , 4 , 5, 6 , 7, 9, 10 , 13, 15, 16, 18,
    21, 22, 24, 26, 29, 31, 32, 33, 35, 40, 41
1.3: 2, 3, 5, 6, 8 , 10, 11, 13, 14 , 23, 25, 26, 33
1.4: 2, 3, 4, 6 , 9, 12 , 13, 18 , 19, 20, 21, 22 , 26 , 36,
    41, 42, 45, 46, 49, 51, 56, 59

Print Exercise 1.3-8 image at 200% from here:
http://www.math.utah.edu/ gustafso/exercise1.3-8-EdwardsPenney.jpg

HW 2, Due Week 3
1.5: 1, 7, 8 , 10 , 13, 18 , 20 , 21, 23, 24, 33,
34 , 36, 39
3.7: 1, 2, 4 , 7 [LC and RC circuits, LRC after 3.6]
2.1: 1, 3, 4, 6, 8 , 10, 12, 16 , 22, 23, 33, 37
2.2: 5, 7, 8, 9, 10 , 11, 15, 17, 18
2.3: 2, 3, 9, 10 , 13, 14, 17, 18, 19, 20 , 22 , 24, 25
Computer Lab 1, Due Week 5:

http://www.math.utah.edu/ gustafso/s2017/2280/2280mapleL1-intro-S2017.pdf

HW 3, Due Week 4
No exercises due, only the computer Numerical DE Project (below),
which uses the statements from exercises 2.4-6, 2.5-6, 2.6-6.
2.4: 2, 3, 4, 6 , 10, 12, 17 Euler's method
2.5: 3, 4, 5, 6 , 10, 12 Improved Euler or Heun
2.6: 3, 4, 5, 6 , 10, 12 Runge-Kutta, RK4

http://www.math.utah.edu/ gustafso/s2017/2280/numericalDEproject-S2017.pdf

HW 4, Due Week 5
3.1: 1, 6, 10, 27, 33, 34 , 36 , 37, 38 , 39, 40 , 41, 42 , 43, 46 , 48 , 53
3.2: 1, 2, 5, 8, 11,13, 16, 18 , 19, 20, 21, 22 , 23, 25, 26
3.3: 3, 7, 8 , 9, 10 , 11, 16 , 17, 23, 27, 31, 32 , 37, 40
3.4: 3, 4, 5, 6, 10, 11, 15, 17, 19, 20 , 21, 33, 34

HW 5, Due Week 6
3.5: 2, 3, 5, 6 , 10, 11, 12 , 19, 21, 22 , 25, 27, 29, 31, 34, 39,
    43, 45, 47, 51, 52, 54 , 57, 58 , 59
3.6: 3, 4 , 5, 7, 8 , 9, 11 , 13, 15, 17, 18 , 20, 21, 22
3.7: 1, 2, 4, 7, 12 , 15, 18 , 19 [LRC circuits]

Computer Lab 2, Newton Cooling, Due Week 6. Choose one project.
http://www.math.utah.edu/ gustafso/s2017/2280/2280mapleL2-freezing-pipes-S2017.pdf
http://www.math.utah.edu/ gustafso/s2017/2280/2280mapleL2-swamp-cooler-S2017.pdf

HW 6, Due Week 7
7.1: 1, 3, 7, 9, 11, 13, 17, 18 , 19, 22 , 23, 27, 28 , 29, 31, 40
7.2: 3, 7, 9, 10 , 15, 16 , 17, 19, 20 , 21, 23, 24 , 35, 37
7.3: 3, 6 , 7, 9, 12 , 13, 17, 18 , 20, 23, 27, 28, 29, 30, 32, 34, 37

HW 7, Due Week 8
7.4: 2 , 3, 9, 13, 15, 17, 22 , 23, 26, 27, 29, 30, 36 , 37
7.5: 3, 4 , 7, 9, 11, 13, 14 , 21, 22 , 25, 27, 28 , 31, 33, 34, 37

HW 8, Due Week 9
7.6: 2, 5, 6, 7 , 8 , 11, 12 , 18, 21, 22 [impulses and Laplace]

4.1: 1, 3, 2, 5, 7, 8 , 11, 12, 15, 17, 20 , 21, 24, 26
4.2: 7, 12 , 27; A Laplace or Cayley-Hamilton-Ziebur solution is acceptable.
4.3: 7, 9 , 21;

See RK4 for systems http://www.math.utah.edu/ gustafso/s2017/2280/numericalVectorMethods.pdf
For Exercise 4.3-9 and similar computer problems, see all files numerical-4.3* in the directory http://www.math.utah.edu/ gust

HW 9, Due Week 11 after Spring Break (Week 10, no classes)
5.1: 16 , 17, 20 , 22 , 24 , 25, 28

Computer Lab 3, Laplace:
http://www.math.utah.edu/ gustafso/s2017/2280/2280mapleL3-laplace-S2017.pdf

HW 10 does not exist. Spring Break.
No Quiz 10. No Lab 10.

HW 11, due Week 12
 5.2: 8 , 11, 13, 20 , 21, 27, 29, 30 , 31, 35, 39, 43, 45, 49
 5.3 [5.4 in edition 5/E]: 6 , 9, 13, 19, 24 , 27
 5.4 [5.5 in edition 5/E]: 1, 7, 11 , 29
 5.5 [5.6 in edition 5/E]: 1, 3, 4 , 11, 12 , 23, 38
 Edition 5/E problems are identical in matching sections:
   Edition 4/E   Edition 5/E
   5.1   5.1
   5.2   5.2
   5.3   5.4 [a new 5.3 was inserted]
   5.4   5.5
   5.5   5.6
   5.6   5.7
 We don't do the 5/E section 5.3 problems.
 The material in 5/E section 5.3 is a reference
 for Chapter 6 in both 4/E and 5/E.

HW 12, due Week 13
 5.6 [5.7 in edition 5/E]: 1, 13, 15 , 19, 23
 6.1: 3, 4 , 5, 7, 8 , 11, 15, 17, 18
 6.2: 2 , 5, 7, 9, 12 , 13, 17, 19, 21, 22 , 23, 29
 6.3: 5, 7, 8 , 9 , 10 , 11, 18, 19

 HW 13, due Week 14
 6.4: 1, 3, 4 , 8 , 9, 10, 11, 13, 14
 6.5: Not covered in class, nothing due.
 Computer Lab 4, Resonance:

http://www.math.utah.edu/ gustafso/s2017/2280/2280mapleL4-resonance-S2017.pdf

 HW 14, due Week 15
 9.1: 6 , 7, 10 , 13 , 15, 17, 20, 24 , 30
 9.2: 2, 8 , 9, 20
 9.3: 1, 4 , 9, 17 , 20
 9.4: 1 , 7, 9 , 13

 HW 15, due by 6pm on May 4 under the door JWB 113
 9.5: 1, 2, 3 , 7 , 9
 9.6: 1, 5