Instructor Lecture and Matlab Demonstration:

mesh, contour(x,y,z, [z1 z2 ...zn]), surf:

\[
x = -2:.1:2; 
\text{y} = x;
\]

\[
\text{[newx newy]} = \text{meshgrid}(x,y);
\]

\[
z = \text{newx}.*\exp(-\text{newx}.^2 - \text{newy}.^2);
\]

\[
\text{subplot}(1,2,1)
\]

\[
\text{mesh(x,y,z)}
\]

\[
\text{subplot}(1,2,2)
\]

\[
\text{contour(x,y,z, -.5:.1:.5)}
\]

user-defined functions:

\[
\text{function output} = \text{poly3(t)}
\]

\[
\text{output} = 3*t.^3 + 5*t.^2 - 2*t +1;
\]

\[
t = -3:.1:3; \text{y} = \text{poly3(t)}; \text{plot(t,y)}
\]

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\[
\text{function output} = \text{expfct(xx,yy)}
\]

\[
\text{output} = xx.*\exp(-xx.^2-yy.^2);
\]

\[
z = \text{expfct(newx,newy)}; \text{mesh(x,y,z)}
\]

Student Matlab Computations:

Exercise 5.29 on page 192: above with \(z = \sin((x^2 + y^2)^{1/2})\)

Exercise 6.1

Student Multiple Choice Questions:

Go to moodle, login, choose ma116 and answer the multiple choice questions.