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## EMEC 303 HW6

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Section-002  
9/25/2020

```
clear; clc;
```

### Problem 1: Fluids Value Problem

- (a) See attached
- (b) See attached

### Problem 2: Boundary Value Problem

- (a) See attached
- (b)

```
% Properties
n = 50;
q = -1000;
L = 10;
E = 200e9;
I = 4e-6;

dx = L/n;

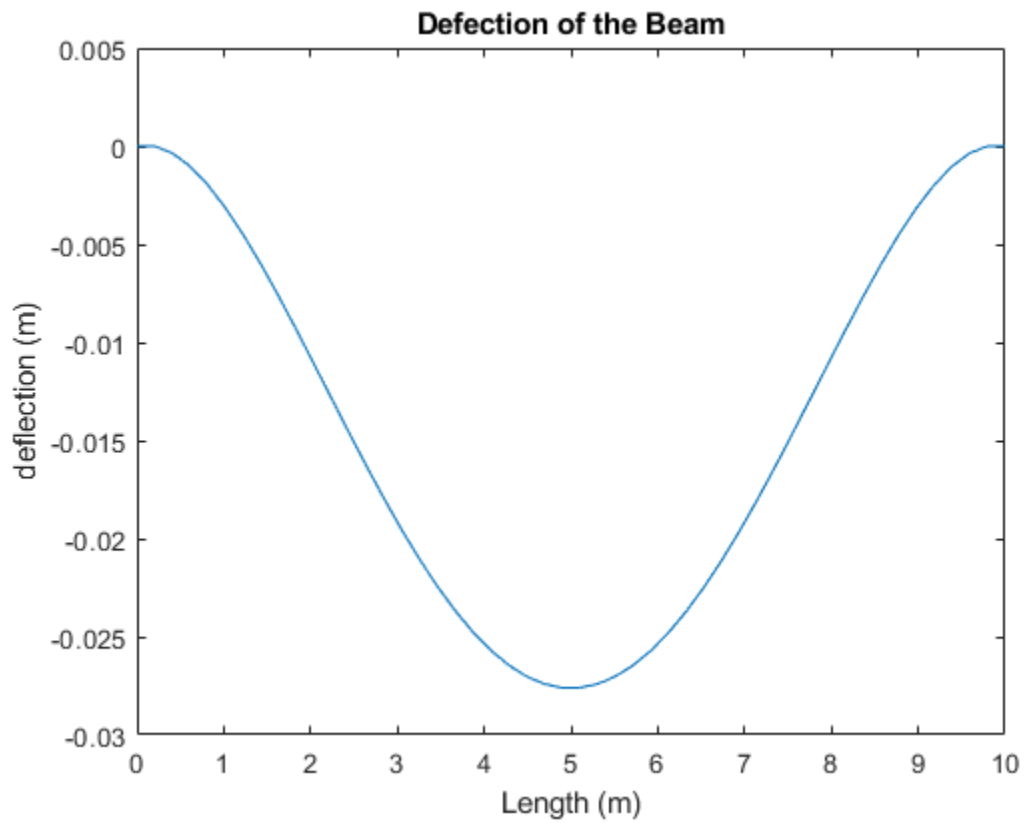
% Instantiate matrices
A = zeros(n);
B = zeros(n,1);

% Add initial conditions
A(1,1) = 1;
A(2,2) = 1;
A(length(A)-1,length(A)-1) = 1;
A(length(A),length(A)) = 1;

for i = 3:n-2
    A(i,i-2) = dx^-4;
    A(i,i+2) = dx^-4;
    A(i,i-1) = -4*dx^-4;
    A(i,i+1) = -4*dx^-4;
```

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```
A(i,i) = 6*dx^-4;  
  
B(i,1) = q/(E*I);  
end  
  
T=A\B;  
  
plot(linspace(0,L,50),T)  
title("Defection of the Beam")  
xlabel("Length (m)")  
ylabel("deflection (m)")
```



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