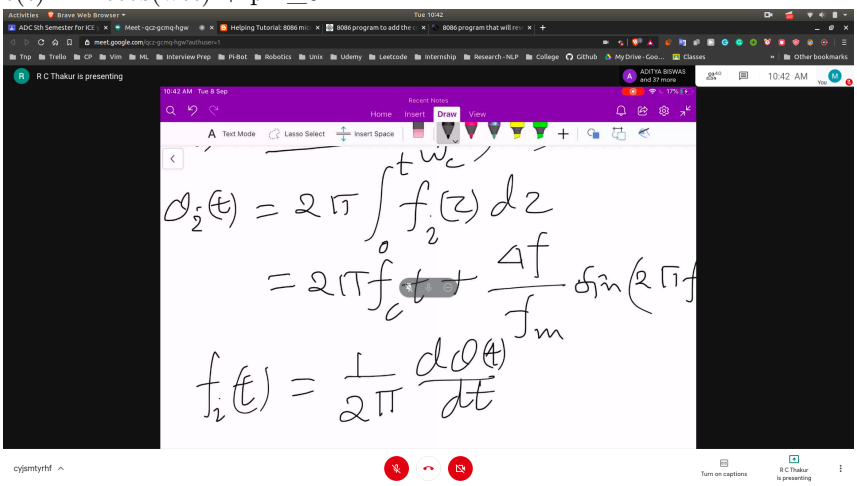
Analysis of FM and PM

Modulation Index in FM and PM

- We have assumed m(t)
  - m(t) = Amcos(wm * t)
- f(t) = f_c + K * Amcos(wm * t)

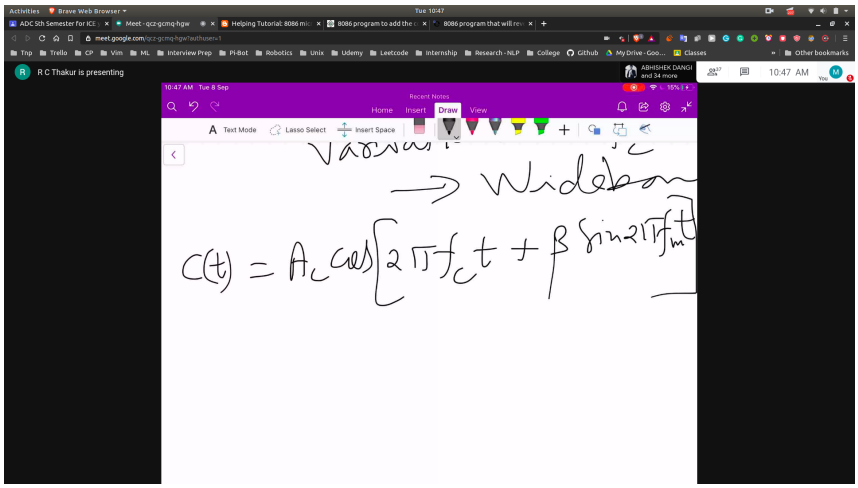
Frequency Deviation

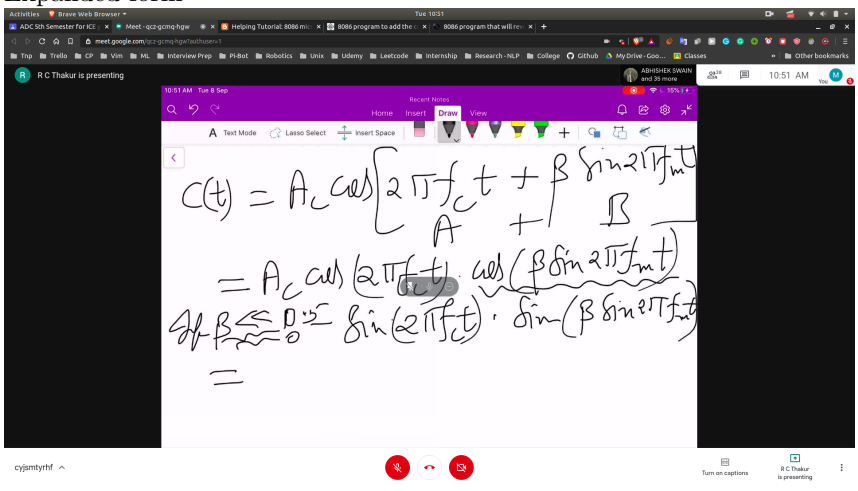
- delta_f = K * Am
- delta_f = can take values max and min depending on the values of magnitude of m(t)
- c(t) = Accos(wct) + phi_0
- 

- here delta_f/fm will be called modulation index==>beta
- if beta is small then it is called -> **Narrow Band**
- if beta is large then it is called -> **Wide Band**

Carrier Wave

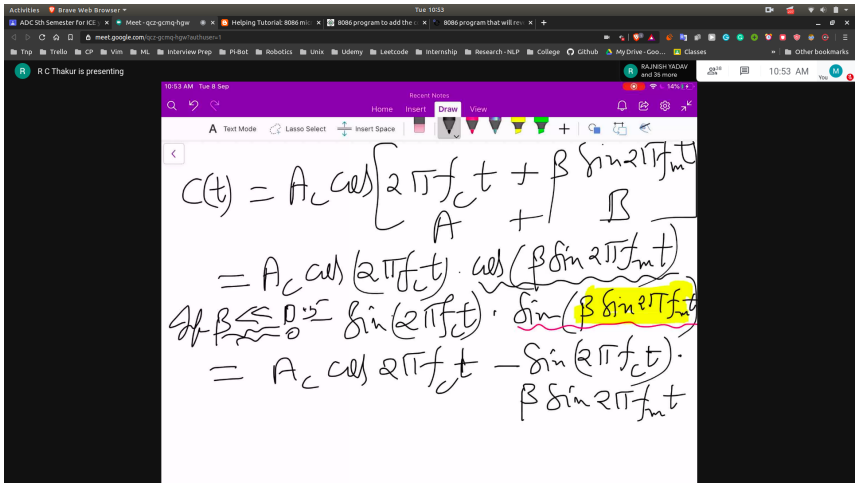
- The final carrier wave can be written as

- 

- Expanded form
- 

For Narrow Signal

- cos(theta) –> 1
- sin(theat) –> theta

- 

In terms of freq band

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