direction using RHR later. Thus, $H_o = mrv\sin\phi$

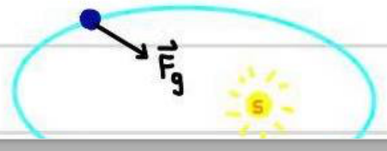
- In a polar coordinate system, $H_o = mrv_\theta$

ANGULAR IMPULSE

- $\frac{d\vec{H}_o}{dt} = \frac{d}{dt}(\vec{r}_o \times m\vec{v}) = \frac{d\vec{r}_o}{dt} \times m\vec{v} + \vec{r}_o \times m\frac{d\vec{v}}{dt} = \cancel{\vec{v} \times m\vec{v}}^{\,0} + \vec{r}_o \times m\vec{a} = \vec{r}_o \times \vec{F} = \vec{M}_o$!

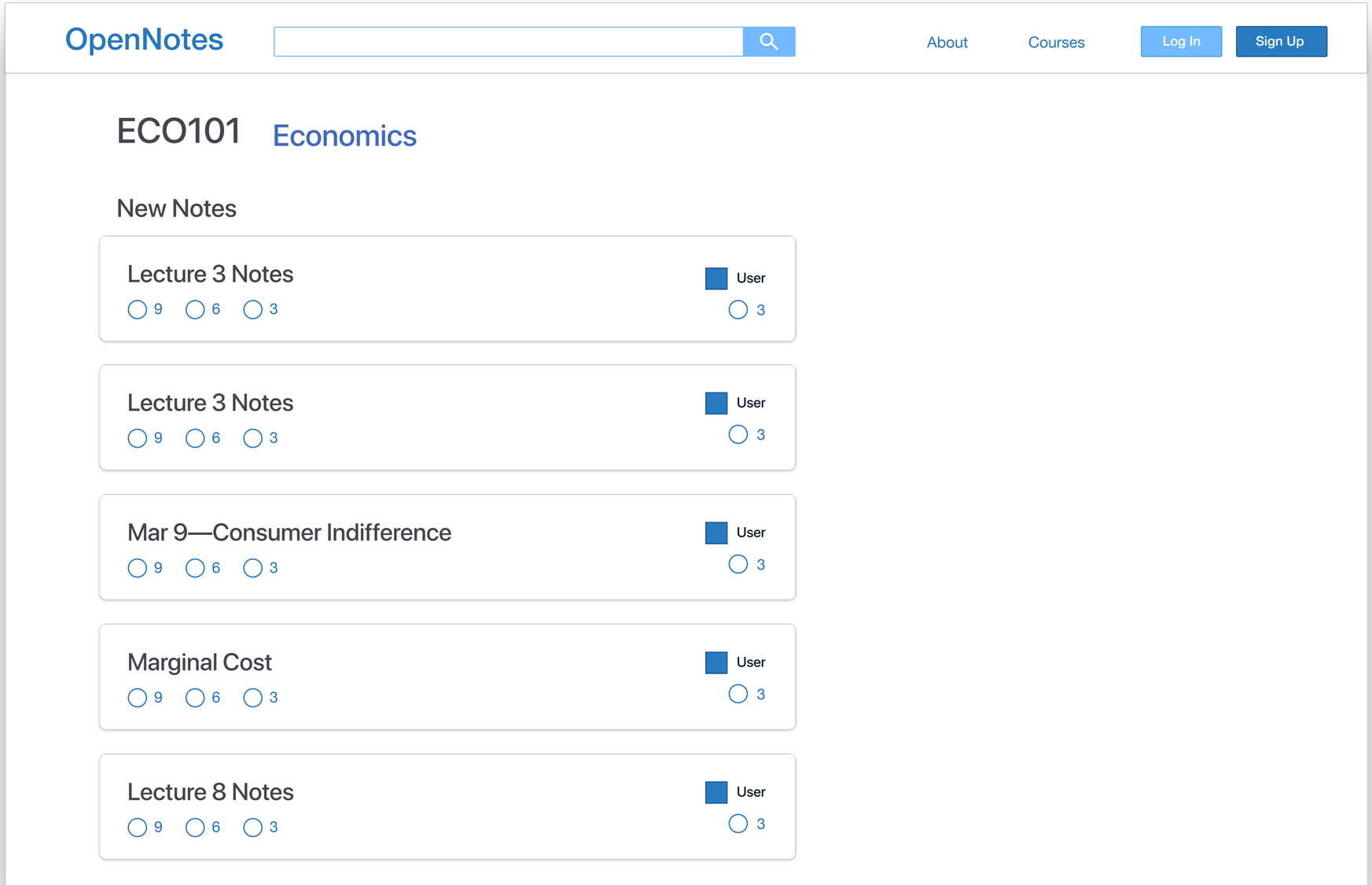
$$\int_{\vec{H}_{o1}}^{\vec{H}_{o2}} d\vec{H}_o = \int_{t_1}^{t_2} \vec{M}_o\,dt \Rightarrow \underbrace{\Delta\vec{H}_o}_{\text{change in angular momentum}} = \underbrace{\int_{t_1}^{t_2} \vec{M}_o\,dt}_{\text{angular impulse}}$$

EXAMPLE: As a planet orbits a star...



Central Force acts radially inward → no moment.

$\sum\vec{M}_S = \vec{r}_s \times \vec{L} = 0 \Rightarrow \vec{H}_o$ is conserved $\Rightarrow m_e r v_\theta$



NAVBAR

'Sign Up'
'Views, Likes, Forks'
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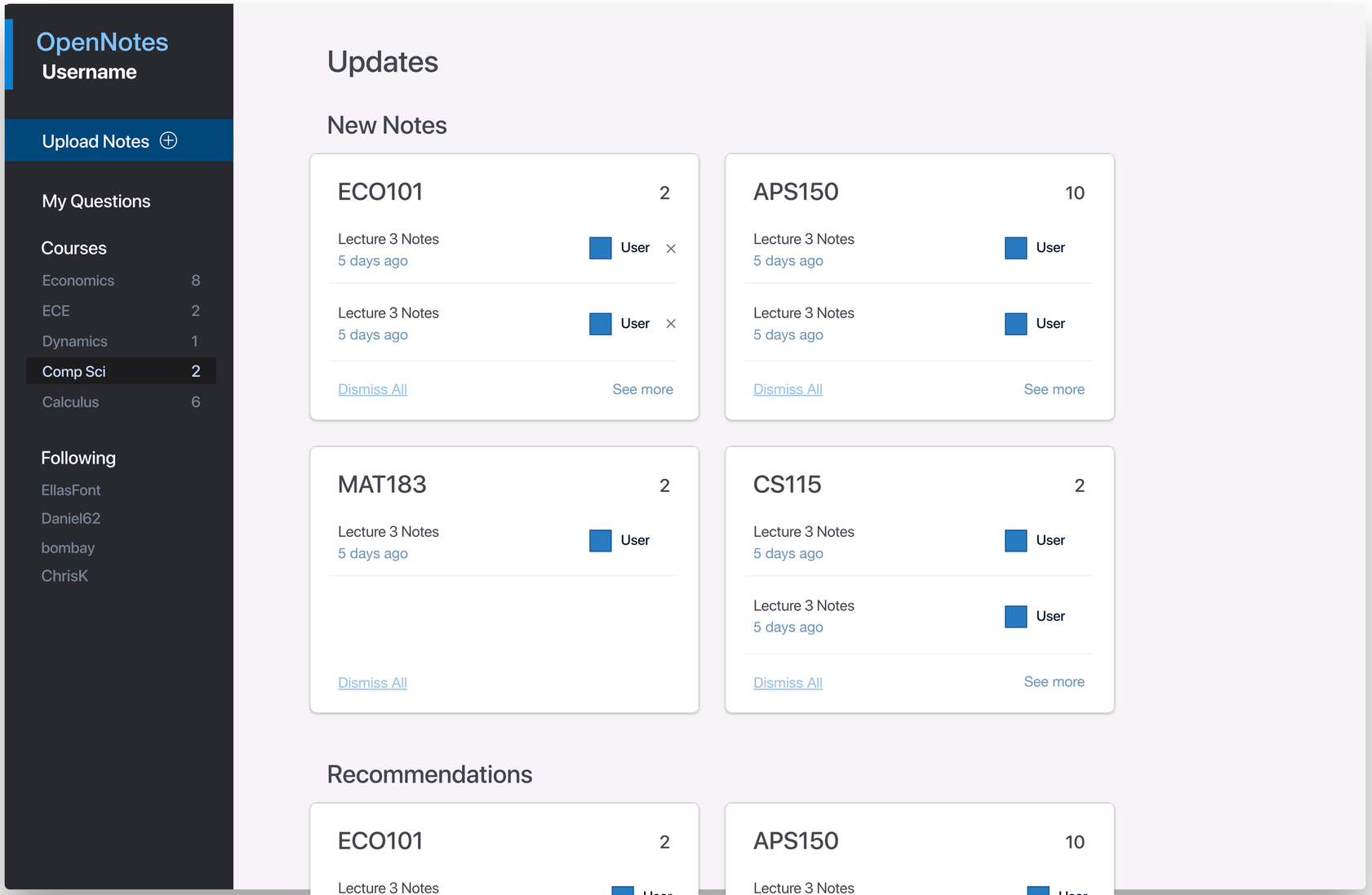
dash BG
#F7F4F8

LogIn
Search Bar
#72B9FF

main text
colour
#45444F

Upload Notes
BG
#00477B

Course header
#2677BE



NAVBAR

highlight BG
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dash BG
#F7F4F8

navbar BG
#28292F

main text colour
#45444F

Upload Notes BG
#00477B

'5 days ago' 'See all'
#45444F

text colour
#788296

text highlight colour
#C6D9FF