

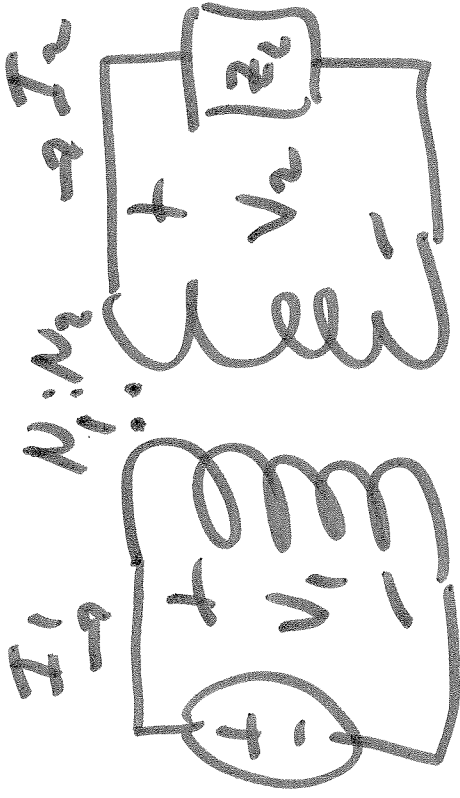
ECE 320 & ECE 329

ENERGY SYSTEMS I
BACKGROUND STUDY IN ENERGY SYSTEMS

SESSION no. 7

$$V = \omega N B A$$

↑ Area
↑ Flux
↑ turn



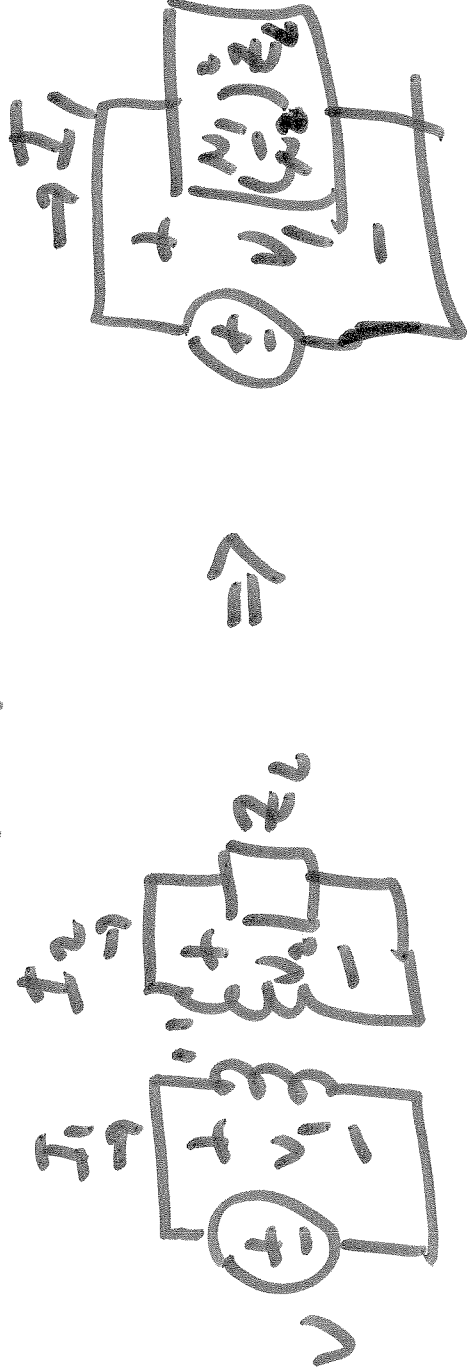
$$\frac{V_1}{N_1} = \frac{V_2}{N_2} \Rightarrow \frac{V_1}{V_2} = \frac{N_1}{N_2}$$

$$N_1 I_1 = N_2 I_2$$

$$V_1 I_1 = V_2 I_2$$

$$\frac{V_1}{I_1} = \left(\frac{\mu_1}{\mu_2} \right)^2 \frac{V_2}{I_2}$$

REFLECTION OF IMPEDANCE

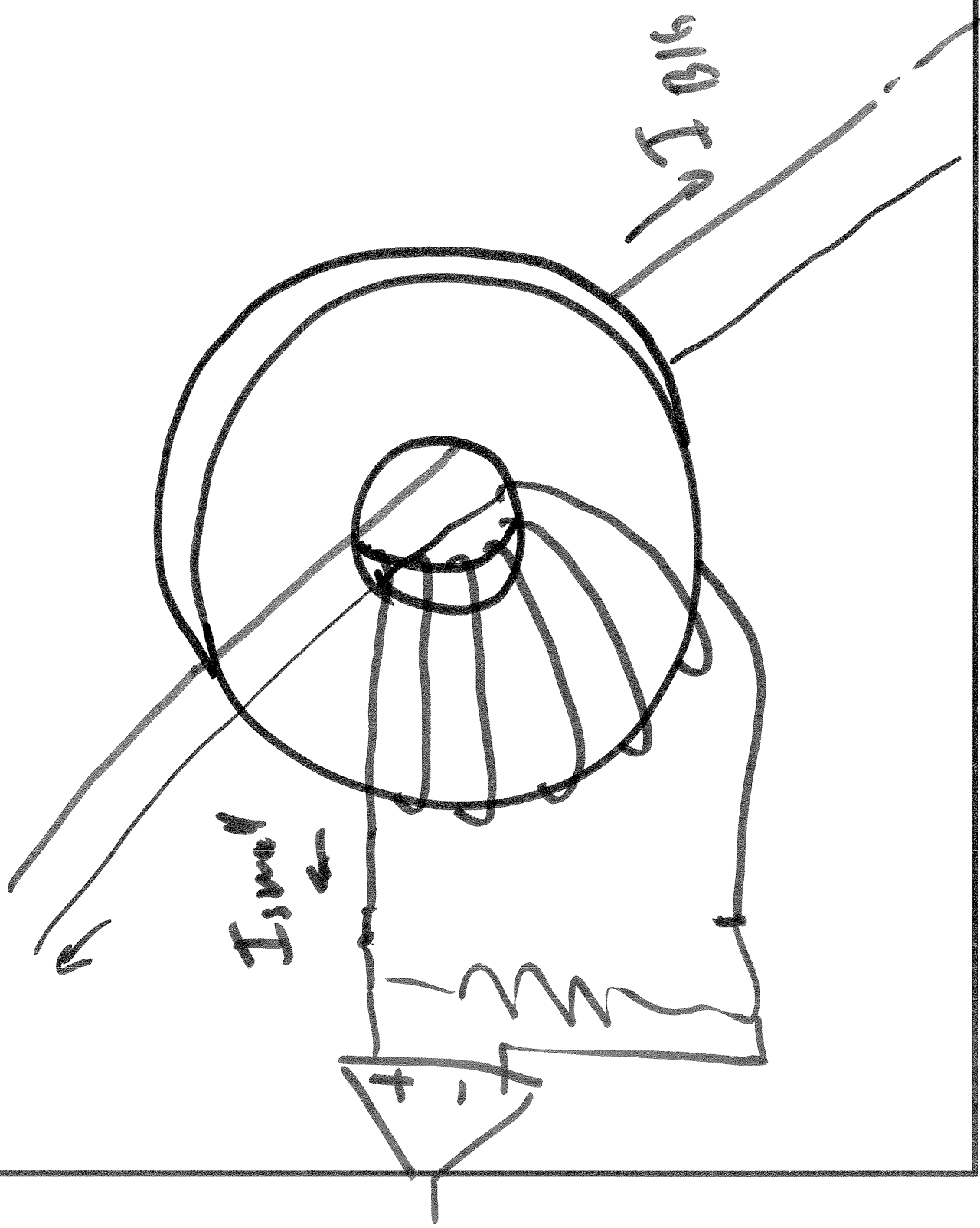


IMPLEMENTATION APPROACHES



1) RATIO $\text{\textcircled{V}}$

2) BILLOCATION



ECE 320 / ECE 329

Energy Systems I

Lesson 7

Transformers

Core

Laminations

Bobbin

Insulating paper

Lacquer insulation

Oxide insulation

Windings

Primary = input

Secondary = output

Legs

Link the windings

E core, I core, torroidal core,
pot core

Silicon steel, ferrite, powdered
iron,

Ferrites and powdered iron are
for higher frequency
transformers