NOTE–TAKING

INSTRUCTION MANUAL

*See page 2 for directions

DATE: TOPIC(S): CLASS:	What are the main concepts in this lecture? 1. 2. 3.

Problem example:	Steps of the problem:

If I get stuck on this type of problem, review or check:	Questions to ask:

Directions: Use the Instruction Manual method for note-taking when you want to organize equations and step-by-step solutions. List the problems/equations in the left-hand column; list the steps for solving the equations in the right-hand column.

Example:

DATE: TOPIC(S): U-substitution CLASS: 252	What are the main concepts in this lecture? 1. Basic u-subs. 2. Recognizing Patterns 3. Chain Rule
Problem Example:	**Steps of the Problem:**
$\int (3x^2+2x)\, e^{(x^3+x^2)}\, dx$ Recognize: exponent of e is coefficient $u = x^3+x^2$ $dx \cdot \frac{du}{dx} = 3x^2+2x \cdot dx$ $du = (3x^2+2x)\, dx$ $\int (3x^2+2x)dx\, e^{(x^3+x^2)}$ (du over $3x^2+2x$, u over x^3+x^2) $\int e^u du = e^u + C$ $= e^{x^3+x^2} + C$	How are the exponents & coefficients related? Make a u variable that includes as much as possible pretend du/dx is a fraction, multiply both sides by dx - do this so you can rewrite the original problem easier Substitute u in the original formula Take derivative as usual Substitute the original value back in derived answer
If I get stuck on this type of problem, review or check:	**Questions to Ask:**
• unwind chain rule • what patterns do I recognize? • could I make it simplier?	what do I do if u does not exactly equal du? Could you do this with multiple variables?

Image source: The Learning Corner @ The Academic Success Center **success.oregonstate.edu/learning**