## Lesson Plan - SPH3U

**Unit** – Electricity and Magnetism

**Topic** – The Motor Principle

**Day # 11**

### Curriculum Expectation(s) and Learning Goal(s) for the Lesson

**a) Expectations:** *(List 1-3 specific expectations from the Ontario Curriculum. Be realistic about how much you can accomplish in one lesson.)*

- explain Ohm’s law, Kirchhoff’s laws, Oersted’s principle, the motor principle, Faraday’s law, and Lenz’s law in relation to electricity and magnetism
- describe the production and interaction of magnetic fields, using diagrams and the principles of electromagnetism (e.g., Oersted’s principle, the motor principle, Faraday’s law, Lenz’s law)
- explain the operation of an electric motor and a generator, including the roles of their respective components

**b) Learning Goal(s):** *(In your own words, what do you want the students to have learned by the end of the lesson? How will you know what they have learned the information?)*

Students will:

- describe the motor principle and its effects on electricity and magnetism
- Use the motor principle’s right hand rule to determine the direction of force as a result of the magnetic field and electric current

### Learning Environment and Materials

*Describe the set up of the classroom, safety considerations, individual and/or group work considerations, facilitating smooth and safe transitions*.

Desks are set up in columns and in each column has 2 desks side by side. At the front there is a projector with white board, SMART board on the side of the class. Lab desks surround the columns of desks. J.B. is visually impaired and is seated closer to the front and there is a seating plan to enforce this and others that do not focus well with specific individuals. The seating plan is mostly alphabetical.

### Overview of the Lesson

*Write the information that you will provide to the students as the intro to the lesson. This may be written on chart paper, white/blackboard, Smart board. This information will inform the students/EAs about what to expect during the lesson.*

**Intro:**

- Take up homework questions from previous day (student led)

**Body:**

- Lecture/discussion style
  - Faraday’s Motor
  - Motor Principle
  - The Right Hand Rule for the Motor Principle
  - Applications of the Motor Principle

**Consolidation:**

- Practice Problems and Examples done as a class
- Homework questions (could possibly be completed in remaining class time)

**Assessment/Evaluation:**

- Time will be allotted throughout lecture for students to ask questions
- Issue will be addresses as homework is attempted
- Homework will be formally taken up as a class next day