

<b>Course</b>	Course Name	:	Physics 2
	Course Code	:	SF184202
	Credit	:	3
	Semester	:	2 (two)

#### COURSE DESCRIPTION

In this course, students will learn to understand the basic laws of physics, the Electric Field; Electric Potential; Electric current ; Magnetic field; Electric Motion Force (EMF) Induction and Alternating Current, through simple mathematical descriptions and introducing examples of the use of concepts

#### COURSE GRADUATE LEARNING OUTCOME

1. Applying logical, critical, systematic, and innovative thinking in the context of developing or implementing science and / or technology in accordance with their field of expertise
2. able to demonstrate independent, quality, and measurable performance
3. show an attitude of responsibility for work in their field of expertise independently

#### COURSE LEARNING OUTCOME

1. able to apply logical, critical, systematic, and innovative thinking in solving problems and implementing physics I
2. able to demonstrate independent, quality, and measurable performance
3. show an attitude of responsibility for work in their field of expertise independently

#### TOPIC

##### Force and Electric field

Electric charge, Coulomb's Law

**Electric field:** electric field strength, line force, calculation of electric field strength for point charge, line charge, ring, disk, cylinder;

**Gauss's Law:** flux, lines of force, Gauss's Law and its application to cylindrical and spherical charges;

**Electric potential:** potential energy, electric potential difference, relationship between electric potential and electric field, calculation of electric potential for point charges, line charges, rings, plates, cylinders and spheres;

**Capacitors:** Capacitance, capacitance calculations for strip capacitors, cylindrical and ball capacitors, series and parallel capacitor circuits, dielectric materials, capacitor energy;

#### REFERENCES

Main Reference :

1. Sears & Zemanky, "University Physics", Pearson Education, 14th ed, USA, 2016
2. Douglas C. Giancoli, 'Physics for Scientists and Engineers, Pearson Education, 4th ed, London, 2014
3. Tim Dosen, " Fisika II", Fisika FMIPA-ITS

Supporting References :

4. Halliday, Resnic, Jearl Walker; 'Fundamental of Physics'. John Wiley and Sons, 10th ed, New York, 2014
5. Tipler, PA, 'Physics for Scientists and Engineers ', 6th ed, W.H. Freeman and Co, New York, 2008