



## TOPICS COVERED

<b>WEEK</b>	<b>LECTURE</b>	<b>TOPICS (Draft – To be updated)</b>
<b>1</b>	<b>1</b>	<b>Introduction</b> <b>Review (Vector algebra, operators)</b>
<b>1</b>	<b>2</b>	<b>Review (Vector algebra, operators)</b>
<b>2</b>	<b>3</b>	<b>Review (Static electric and magnetic fields)</b>
<b>2</b>	<b>4</b>	<b>Time-varying fields</b> <b>Faraday's law</b>
<b>3</b>	<b>5</b>	<b>A stationary circuit in a time-varying magnetic field</b>
<b>3</b>	<b>6</b>	<b>Transformers</b>
<b>4</b>	<b>7</b>	<b>Moving conductor in a static magnetic field</b>
<b>4</b>	<b>8</b>	<b>Maxwell's equations</b> <b>Differential equations, Integral equations</b>
<b>5</b>	<b>9</b>	--
<b>5</b>	<b>10</b>	Phasors Solution of wave equations Time harmonic fields
<b>6</b>	<b>11</b>	Helmholtz's equations for phasor representations Plane electromagnetic waves Doppler effect
<b>6</b>	<b>12</b>	Helmholtz's equations for phasor representations Plane electromagnetic waves Doppler effect
<b>7</b>	<b>13</b>	Polarization of waves Plane waves in lossy media
<b>7</b>	<b>14</b>	Polarization of waves Plane waves in lossy media
<b>8</b>	<b>15</b>	Electromagnetic power The poynting vector Instantenous power density Average power density
<b>8</b>	<b>16</b>	Power – Examples Review – Mid Term Topics
<b>9</b>		<b>MID TERM</b>



10	17	Normal incidence of plane waves at plane boundaries Normal incidence on a good conductor
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11	19	Oblique incidence Perpendicular / Paralel polarization Brewster angle
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12	21	Transmission lines General TL equations
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13	23	TL parameters Wave characteristics of an infinite TL
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14	25	Wave characteristics on finite TL Open circuit and short circuit lines Reflection coefficient Standing wave ratio The Smith Chart
14	26	Review – Final
15		FINAL