Power System Analysis
供電=用電

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负載
- 被动（不会改變ω）：ω（線性）↓ 可用叠加定理
  - R: $V=iR$
  - C: $i=C\frac{dv}{dt}$
  - L: $V=L\frac{di}{dt}$
- 主动（非線性）

交流	直流
↓ 要摆在一起要 { 同freq. 同电压. 同phase.	↓ 要摆在一起要 { freq = 0, phase = 0, Voltage 相同.

電
- 直流（0Hz）
- 交流（60Hz + 50Hz）. （台 / 日）

①平面，空間正交

② Fourier，直流和交流正交
$\sin n\omega t$，$\cos m\omega t$ 正交，
$\sin n\omega t$，$\cos n\omega t$ 正交，

③ 多项式，$1, x, x^2 \dots$ 正交

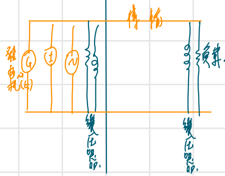
電路學 ①直流電路分析：V, i, Power.
②交流電路分析：V, i, Power { 实功、虚功 }，频宽.

電力工程：電能傳送.

電力電子：電能轉換
{ 直流 0Hz / 交流 60Hz }
① AC → DC
② DC → DC
③ DC → AC
④ AC → AC
↳ ex: 60Hz → 50Hz

電子學：二支腳 ①開 ②關（不可控）.
三支腳 ①開 ②關（可控）. ③線性放大（比例）

直流電力 0Hz（可儲存 ex: 電池）	交流電力 60Hz（無法儲存）
DC ← AC	
DC —太陽能→ AC	
（風力發电） ① DC (0Hz) ← AC (not 60Hz) ∵ 轉速不同. ② → AC (60Hz).	



供电 = 用电.

＊考試只考講義的範例，只會改數字.

＊電机机械：利用磁場轉換能量.
① 發电机(G)：機械 → 電
② 馬達：電 → 機械
③ 变压器：電 → 電.

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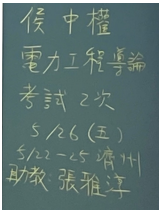

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