

Cluster A

98 topics < 96.25 hours >

prerequisites in other clusters linked

to topic here: 47

successors in other cluster linked to
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cluster 170

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Prerequisite Topic \Rightarrow Successor
Topic

carnot cycles < 1.0 hr >	\Rightarrow	entropy transfer by reversible heat engine cycles < 1.0 hr >
carnot cycles < 1.0 hr >	\Rightarrow	process efficiency analysis < 1.0 hr >
carnot cycles < 1.0 hr >	\Rightarrow	rankine cycles < 1.0 hr >
combustion < 2.0 hr >	\Rightarrow	external combustion engines < 0.5 hr >
combustion < 2.0 hr >	\Rightarrow	internal combustion engines < 1.0 hr >
compressors < 0.5 hr >	\Rightarrow	heat transfer by condensation < 0.5 hr >
compressors < 0.5 hr >	\Rightarrow	steady flow components of thermodynamic systems < 1.0 hr >
compressors < 0.5 hr >	\Rightarrow	stirling cycles < 1.0 hr >
compressors < 0.5 hr >	\Rightarrow	thermodynamic cycles < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	conductors < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	diffusion < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	evaporators & condensers < 0.5 hr >
conduction < 2.0 hr >	\Rightarrow	fins < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	furnaces < 0.5 hr >
conduction < 2.0 hr >	\Rightarrow	heat transfer modes < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	heat transfer through extended surfaces < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	lumped thermal capacitance < 0.5 hr >
conduction < 2.0 hr >	\Rightarrow	pressure drop & heat transfer correlations < 0.5 hr >
conduction < 2.0 hr >	\Rightarrow	reversible heat transfer in the ideal gas model < 1.0 hr >
conduction < 2.0 hr >	\Rightarrow	thermal resistance < 1.0 hr >

conduction < 2.0 hr >	⇒	thermal stress < 1.0 hr >
conduction < 2.0 hr >	⇒	transient heat conduction < 1.0 hr >
conduction < 2.0 hr >	⇒	unsteady heat conduction < 1.0 hr >
convection < 3.0 hr >	⇒	extended surface heat transfer < 1.0 hr >
convection < 3.0 hr >	⇒	external forced convection < 1.0 hr >
convection < 3.0 hr >	⇒	forced convection heat transfer < 1.0 hr >
convection < 3.0 hr >	⇒	furnaces < 0.5 hr >
convection < 3.0 hr >	⇒	heat exchangers < 1.0 hr >
convection < 3.0 hr >	⇒	heat transfer by condensation < 0.5 hr >
convection < 3.0 hr >	⇒	heat transfer correlations < 0.5 hr >
convection < 3.0 hr >	⇒	heat transfer modes < 1.0 hr >
convection < 3.0 hr >	⇒	internal forced convection < 1.0 hr >
convection < 3.0 hr >	⇒	pressure drop & heat transfer correlations < 0.5 hr >
convection < 3.0 hr >	⇒	reversible heat transfer in the ideal gas model < 1.0 hr >
convection < 3.0 hr >	⇒	steady heat transfer solid-fluid < 1.0 hr >
convection < 3.0 hr >	⇒	transient heat transfer fluid-solid < 1.0 hr >
e-ntu method of convective heat exchange < 0.5 hr >	⇒	heat exchangers < 1.0 hr >
efficiency < 1.0 hr >	⇒	heat pumps < 0.5 hr >
efficiency < 1.0 hr >	⇒	internal combustion engines < 1.0 hr >
efficiency < 1.0 hr >	⇒	irreversible cycles & second law limits on q & w < 0.5 hr >
efficiency < 1.0 hr >	⇒	matching pumps to piping systems < 0.25 hr >
efficiency < 1.0 hr >	⇒	rankine cycles < 1.0 hr >
efficiency < 1.0 hr >	⇒	transducers < 1.0 hr >
enthalpy < 0.5 hr >	⇒	chemical behavior of solids < 1.0 hr >
enthalpy < 0.5 hr >	⇒	diffusion < 1.0 hr >
enthalpy < 0.5 hr >	⇒	entropy < 1.0 hr >
entropy < 1.0 hr >	⇒	chemical behavior of solids < 1.0 hr >
entropy < 1.0 hr >	⇒	diffusion < 1.0 hr >
entropy < 1.0 hr >	⇒	irreversibility < 0.5 hr >
entropy < 1.0 hr >	⇒	stability of state equations < 1.0 hr >

evaporators & condensers	< 0.5 hr >	⇒	air conditioning system design < 1.0 hr >
evaporators & condensers	< 0.5 hr >	⇒	steady flow components of thermodynamic systems < 1.0 hr >
evaporators & condensers	< 0.5 hr >	⇒	stirling cycles < 1.0 hr >
evaporators & condensers	< 0.5 hr >	⇒	thermodynamic cycles < 1.0 hr >
extended surface heat transfer	< 1.0 hr >	⇒	fins < 1.0 hr >
external forced convection	< 1.0 hr >	⇒	extended surface heat transfer < 1.0 hr >
external forced convection	< 1.0 hr >	⇒	fins < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	air compressors < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	air conditioning system design < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	availability < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	available energy < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	carnot cycles < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	combustion < 2.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	compressors < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	efficiency < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	enthalpy < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	external combustion engines < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	furnaces < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	gas turbines < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	heat pumps < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	internal combustion engines < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	power cycles < 2.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	rankine cycles < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	reciprocating engines < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	steady flow components of thermodynamic systems < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	steam engines < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	steam turbines < 0.5 hr >
first law of thermodynamics	< 2.0 hr >	⇒	stirling cycles < 1.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	thermal systems < 4.0 hr >
first law of thermodynamics	< 2.0 hr >	⇒	thermodynamic cycles < 1.0 hr >
gas laws	< 1.0 hr >	⇒	reversible heat transfer in the ideal gas model < 1.0 hr >
gas laws	< 1.0 hr >	⇒	reversible work transfer < 0.5 hr >

gas laws < 1.0 hr >	\Rightarrow	solidification processes < 1.0 hr >
gradients < 1.0 hr >	\Rightarrow	conduction < 2.0 hr >
gradients < 1.0 hr >	\Rightarrow	moment curvature relations < 1.0 hr >
gradients < 1.0 hr >	\Rightarrow	orthogonal curvilinear coordinates < 1.0 hr >
gradients < 1.0 hr >	\Rightarrow	stokes` theorem < 1.0 hr >
heat transfer correlations < 0.5 hr >	\Rightarrow	internal forced convection < 1.0 hr >
heat transfer modes < 1.0 hr >	\Rightarrow	black body radiation < 1.0 hr >
heat transfer modes < 1.0 hr >	\Rightarrow	external forced convection < 1.0 hr >
heat transfer modes < 1.0 hr >	\Rightarrow	heat exchangers < 1.0 hr >
heat transfer modes < 1.0 hr >	\Rightarrow	internal forced convection < 1.0 hr >
heat transfer modes < 1.0 hr >	\Rightarrow	stefan boltzmann law < 0.5 hr >
heat transfer modes < 1.0 hr >	\Rightarrow	thermal systems < 4.0 hr >
internal combustion engines < 1.0 hr >	\Rightarrow	gas turbines < 0.5 hr >
internal forced convection < 1.0 hr >	\Rightarrow	e-ntu method of convective heat exchange < 0.5 hr >
internal forced convection < 1.0 hr >	\Rightarrow	lmtd method of convective heat exchange < 0.25 hr >
irreversibility < 0.5 hr >	\Rightarrow	availability < 0.5 hr >
irreversibility < 0.5 hr >	\Rightarrow	available energy < 0.5 hr >
irreversibility < 0.5 hr >	\Rightarrow	carnot cycles < 1.0 hr >
kinetic molecular theory < 1.0 hr >	\Rightarrow	gas laws < 1.0 hr >
liquids & solids < 1.0 hr >	\Rightarrow	fluid surface tension < 0.5 hr >
liquids & solids < 1.0 hr >	\Rightarrow	microfluids < 2.0 hr >
liquids & solids < 1.0 hr >	\Rightarrow	properties of fluids < 2.0 hr >
liquids & solids < 1.0 hr >	\Rightarrow	solids & liquids: properties < 2.0 hr >
lmtd method of convective heat exchange < 0.25 hr >	\Rightarrow	heat exchangers < 1.0 hr >
plane coordinate systems < 1.0 hr >	\Rightarrow	orthogonal curvilinear coordinates < 1.0 hr >
power cycles < 2.0 hr >	\Rightarrow	power sources < 2.0 hr >
power cycles < 2.0 hr >	\Rightarrow	stirling cycles < 1.0 hr >
power < 3.0 hr >	\Rightarrow	efficiency < 1.0 hr >
power < 3.0 hr >	\Rightarrow	matching pumps to piping systems < 0.25 hr >
power < 3.0 hr >	\Rightarrow	power sources < 2.0 hr >

power < 3.0 hr >	⇒	power transmission elements < 1.0 hr >
power < 3.0 hr >	⇒	process efficiency analysis < 1.0 hr >
properties of fluids < 2.0 hr >	⇒	evaporators & condensers < 0.5 hr >
properties of fluids < 2.0 hr >	⇒	fluid surface tension < 0.5 hr >
properties of fluids < 2.0 hr >	⇒	microfluids < 2.0 hr >
properties of fluids < 2.0 hr >	⇒	solids & liquids: properties < 2.0 hr >
pumps & turbines < 0.5 hr >	⇒	air conditioning system design < 1.0 hr >
pumps & turbines < 0.5 hr >	⇒	compressors < 0.5 hr >
pumps & turbines < 0.5 hr >	⇒	steam generators < 0.5 hr >
pumps & turbines < 0.5 hr >	⇒	stirling cycles < 1.0 hr >
pumps & turbines < 0.5 hr >	⇒	thermodynamic cycles < 1.0 hr >
radiant heat transfer < 1.0 hr >	⇒	extended surface heat transfer < 1.0 hr >
radiant heat transfer < 1.0 hr >	⇒	kinetic molecular theory < 1.0 hr >
radiant heat transfer < 1.0 hr >	⇒	pressure drop & heat transfer correlations < 0.5 hr >
radiant heat transfer < 1.0 hr >	⇒	stefan boltzmann law < 0.5 hr >
radiant heat transfer < 1.0 hr >	⇒	thermal resistance < 1.0 hr >
rankine cycles < 1.0 hr >	⇒	brayton cycle (air standard) with regeneration < 0.5 hr >
rankine cycles < 1.0 hr >	⇒	reheat regenerative rankine cycles < 0.25 hr >
refrigeration < 1.0 hr >	⇒	air conditioning system design < 1.0 hr >
reversible work transfer < 0.5 hr >	⇒	carnot cycles < 1.0 hr >
second law of thermodynamics for control volumes < 1.0 hr >	⇒	reversible entropy transfer between heat reservoirs < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	air conditioning system design < 1.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	availability < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	available energy < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	carnot cycles < 1.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	combustion < 2.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	entropy generation in heat engine cycles < 1.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	entropy transfer by reversible heat engine cycles < 1.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	external combustion engines < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	furnaces < 0.5 hr >

second law of thermodynamics < 2.0 hr >	⇒	heat pumps < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	internal combustion engines < 1.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	irreversible cycles & second law limits on q & w < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	reversible entropy transfer between heat reservoirs < 0.5 hr >
second law of thermodynamics < 2.0 hr >	⇒	second law of thermodynamics for control volumes < 1.0 hr >
second law of thermodynamics < 2.0 hr >	⇒	second law of thermodynamics for open systems < 1.0 hr >
solids & liquids: properties < 2.0 hr >	⇒	conduction < 2.0 hr >
solids & liquids: properties < 2.0 hr >	⇒	heat transfer by condensation < 0.5 hr >
solids & liquids: properties < 2.0 hr >	⇒	solidification processes < 1.0 hr >
solids & liquids: properties < 2.0 hr >	⇒	solubility < 1.0 hr >
states of matter < 0.5 hr >	⇒	liquids & solids < 1.0 hr >
states of matter < 0.5 hr >	⇒	solids & liquids: properties < 2.0 hr >
states of matter < 0.5 hr >	⇒	thermophysical properties of fluids, extensive < 0.5 hr >
states of matter < 0.5 hr >	⇒	thermophysical properties of fluids, intensive < 0.5 hr >
steady flow components of thermodynamic systems < 1.0 hr >	⇒	thermodynamic cycles < 1.0 hr >
steady heat transfer solid-fluid < 1.0 hr >	⇒	transient heat conduction < 1.0 hr >
steam turbines < 0.5 hr >	⇒	rankine cycles < 1.0 hr >
steam turbines < 0.5 hr >	⇒	steam engines < 0.5 hr >
stress-strain-temperature relations < 1.0 hr >	⇒	thermal stress < 1.0 hr >
thermal resistance < 1.0 hr >	⇒	thermoelasticity < 1.0 hr >
thermodynamic cycles < 1.0 hr >	⇒	air conditioning system design < 1.0 hr >
thermodynamic cycles < 1.0 hr >	⇒	brayton cycle (air standard) with regeneration < 0.5 hr >
thermodynamic cycles < 1.0 hr >	⇒	combined cycle plants < 0.5 hr >
thermodynamic cycles < 1.0 hr >	⇒	heat pumps < 0.5 hr >
thermodynamic cycles < 1.0 hr >	⇒	power cycles < 2.0 hr >
transient response < 1.0 hr >	⇒	transient heat conduction < 1.0 hr >
transient response < 1.0 hr >	⇒	transient heat transfer fluid-solid < 1.0 hr >
triple integrals < 1.0 hr >	⇒	stokes` theorem < 1.0 hr >