

CHEMICAL ENGINEER

Designs and prepares specifications for chemical process systems and the construction and operation of commercial-scale chemical plants, and supervises industrial processing and fabrication of products undergoing physical and chemical changes.

Tasks Include:

- preparing designs for chemical process systems and planning control systems for processes such as those used to remove and separate components, effect chemical changes, test and evaluate fuels, transfer heat, and control the storing and handling of solids, liquids and gases
- monitoring the operation and maintenance of equipment to achieve maximum efficiency under safe operating conditions
- ensuring correct materials and equipment are used and that they conform to specifications
- diagnosing malfunctions in chemical plants and instituting remedial action
- studying product utilisation and pollution control problems
- reviewing plans for new products and submitting material selection recommendations in accordance with design specifications and factors such as strength, weight and cost
- planning and implementing laboratory operations to develop new materials and fabrication procedures for new materials to fulfil production cost and performance standards
- conferring with producers of materials, such as metals, ceramics, polymers, cements and elastomers, during the investigation and evaluation of materials suitable for specific product applications
- reviewing product failure data and implementing laboratory tests to establish or reject possible causes, and advising on ways to overcome any problems