# IChemE releases report on the role of chemical engineering in the ...**Job title:** Chemical Engineer

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| **Job title:** | Chemical engineers develop ways to turn raw materials into everyday products. |
| **Routes and Entry requirements:** | **University**  You'll normally need a degree or postgraduate qualification in:   * chemical engineering * process engineering * biochemical engineering   You may be able to do a postgraduate conversion course if you have a degree in a related area like engineering, chemistry or polymer science.  A postgraduate master's qualification like an MEng can be studied at university. This course includes independent research and gives you a greater knowledge and understanding of chemical engineering science. It could also prepare you for further postgraduate study like a PhD.  You'll usually need:   * 4 or 5 GCSEs at grades 9 to 4 (A\* to C), or equivalent, including English, maths and science * 2 or 3 A levels, or equivalent, including chemistry * a degree in a relevant subject for postgraduate study   **Apprenticeship**  You may be able to do a science industry process engineer degree apprenticeship.  You'll usually need:   * 4 or 5 GCSEs at grades 9 to 4 (A\* to C) and A levels, or equivalent, for a higher or degree apprenticeship   **Work**  You could start as a chemical engineering technician and do training on the job to qualify as an engineer. |
| **Skills required:** | You'll need:   * maths knowledge * knowledge of engineering science and technology * knowledge of chemistry including the safe use and disposal of chemicals * design skills and knowledge * knowledge of physics * analytical thinking skills * science skills * to be thorough and pay attention to detail * to be able to use a computer and the main software packages competently |
| **What you'll do:** | If you work in research and development, you’ll:   * test new ways to develop products in the lab * use computer models to work out the safest and most cost-effective production methods * plan how to move lab tests into a pilot production phase, then on to large-scale industrial processing * develop methods to deal with by-products and waste materials in a safe way   In manufacturing, you’ll:   * work with plant designers to create equipment and control instruments for the production process * help to oversee the day-to-day operation of the processing plant * monitor production and deal with problems * work closely with quality control and health and safety managers |
| **What you’ll earn:** | £29,000 Starter *to* £60,000 Experienced |
| **Working hours, patterns and environment:** | * Typical hours (a week) 39 to 41 * You could work evenings, weekends/ bank holidays on shifts * You could work in a laboratory, in an office or at a manufacturing plant. * Your working environment may be outdoors some of the time. * You may need to wear protective clothing. |
| **Career path and progression:** | With experience, you could progress to senior process or design engineer, research and development manager. You could go on to be a plant manager, or overall operations manager.   You could also move into consultancy work. |