Job Description: Mechanical Engineer

Company: Vitalis Ortho

Location: Paddington, London (with travel requirements)

Role Type: Full-Time, Early-stage Startup

The Vision

At **Vitalis Ortho**, we are on a mission to reverse osteoarthritis by activating the body's natural healing potential.

The current standard of care for knee osteoarthritis often leads younger patients (≤65 years old) toward total joint replacements that carry a high risk of complications, with revision rates as high as 1 in 3 within a decade. We are closing this gap.

We are developing a proprietary, temporary mechanical implant designed to induce cartilage regeneration. By delaying or preventing the need for invasive knee replacements, we are addressing a significant and growing global market. Our technology is challenging traditional orthopaedic methods by targeting disease modification, not just symptom management.

As an early hire, you will work directly alongside two highly experienced co-founders, to take this product from concept to clinic. This is a "founding team" opportunity to join a venture supported by world-class clinical and scientific advisors, where your work will define the future of regenerative medicine. You will own significant technical workstreams, shape our R&D strategy, and build the experimental infrastructure that underpins our path to the clinic — including AI-optimised processes, design iteration, and technical pipelines that allow our small team to move at the pace of a much larger one.

The Role

We are looking for a high-calibre **Mechanical Engineer** who thrives on autonomy and technical challenge. You will be the technical engine of the company, responsible for the end-to-end development of our novel mechanical systems, from initial CAD iterations to the final regulatory technical files.

Crucially, as a founding team member, you will be instrumental in how this company operates, not just what it produces. We think the best engineers are also systems thinkers. At this stage, how we work matters as much as what we work on. You will be expected to question our processes, propose better ones, and use every tool available, including the current generation of AI, to work more efficiently.

Key Responsibilities

- **Design & Development:** Perform CAD design and FEA simulations of novel implants and specialised surgical instruments, ensuring they are optimised for performance, bio-compatibility, and mechanical efficacy.
- **R&D & Testing:** Develop and execute robust benchtop testing protocols to simulate complex physiological forces. You will oversee and conduct hands-on testing in labs to ensure our mechanical benchmarks are met.
- **First Principles Engineering:** Derive solutions from fundamental engineering principles to solve complex problems where no manual exists.
- **AI & Systems Integration:** Contribute to the design of lean, AI-augmented business and engineering workflows to maximise our startups efficiency.
- **Clinical Collaboration:** Partner with world-class surgeons to iterate on surgical techniques and ensure the instrumentation is intuitive and effective.
- **Regulatory & Quality:** Author high-quality technical reports for regulatory bodies, ensuring a meticulous "Golden Thread" of design control.
- **Supply Chain:** Build and manage relationships with specialist suppliers and manufacturers to bring your designs to life.

About You

You are a "quick learner" who can move projects forward even when information is limited. You are efficient, resourceful, inventive, and comfortable challenging the status quo.

Required Qualifications & Skills

- **Academic Excellence:** A degree in Mechanical Engineering (BEng/MEng) with a **First Class or Upper Second Class (2:1)** honours from a top-tier university.
- **Engineering Fundamentals:** A deep-rooted understanding of engineering principles and the ability to derive solutions from first principles.
- **AI Mindset:** A tech-forward approach with a willingness to adopt and help build AI-based systems for engineering and business operations.
- **CAD:** Proficient in developing detailed drawings and models (e.g., SolidWorks, Autodesk, Fusion 360).
- **Communication:** Strong technical writing skills for reports and the ability to communicate effectively with diverse stakeholders (surgeons, suppliers, regulators).
- **Location & Mobility:** Based in (or able to commute to) **Paddington, London**, and willing to travel as required for lab testing, supplier visits, and clinical meetings.

Desirable Attributes (but not required)

- **Advanced Degree:** A PhD in a related mechanical or biomedical engineering discipline.
- **Industry Experience:** Prior experience in orthopaedics, particularly in implantable devices, fixators, or precision mechanisms, is a significant advantage.
- **The "Non-Expert" Exception:** If you do not have orthopaedic experience, you must demonstrate an exceptional ability to learn complex new domains quickly and possess the intrinsic motivation to become an expert in the field.

Why Vitalis Ortho?

- **Unmatched Growth:** As an early hire in a company with substantial growth potential, your career trajectory is tied to our success. This role is designed to lead to significant leadership opportunities.
- **Proven Leadership:** Join a team with a track record of successful exits and deep commercial expertise in the medical device industry.
- **Direct Impact:** Your designs will directly prevent unnecessary major surgeries for thousands of young patients, significantly improving their long-term quality of life.
- **Expert Mentorship:** Work daily with veteran co-founders and a world-class group of clinical advisors in a dynamic, high-stakes startup environment.

Compensation & Benefits

- **Competitive Reward:** We are looking for the best talent and offer a compensation package of up to £60,000 per annum.
- **Equity Stake:** As a founding team member, you will participate in the long-term success of the company through a meaningful equity package.
- **Modern Workspace:** Based in the heart of Paddington with a focus on high-performance, tech-forward work culture.

How to Apply

Please submit your CV along with a brief cover letter detailing a specific instance where you solved a complex mechanical problem from first principles to management@vitalisortho.com.