

# BSN Platform Tutorial

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**BSN Platform Tutorial**  
<http://vip.doc.ic.ac.uk/bsn/tutorial>

Novel bioelectrical, biochemical, biophysical, and mechanical sensors  
Hardware considerations: low power RF transceiver, energy scavenging, battery technology, miniaturisation, system integration, process and cost of manufacturing  
Biocompatibility and materials  
Context awareness and multi-sensor data fusion  
Quality of service and security issues  
Standards and light-weight communication protocols  
Wearable and implantable sensor integration and development platform  
Applications of body-sensor networks

## Tutorial Registration:

For registration form and payment details please see

<http://vip.doc.ic.ac.uk/bsn/tutorial>

Each fully registered attendee will receive a BSN development kit which consists of a programming board, a sensor board, and a pair of BSN nodes.

## Session 1: Introduction to Body Sensor Networks

Introduce the current state-of-the-art in wireless sensor networks and its significance and future applications to sensing and monitoring devices for healthcare.

## Session 2: Introduction to Tiny OS

Introduce the major concepts required to program Tiny OS applications. These include a description of components, interfaces, commands, events, and Tiny OS programming model.

## Session 3: BSN hardware architecture and sensor board design

Introduce the basic architecture and extensibility of BSN Node for different sensing environments both for healthcare applications and general wireless sensor networks.

## Session 4: BSN programming I

Hands on session on TinyOS programming. This session will illustrate how to build, debug, and run Tiny OS applications on the BSN node.

## Session 5: BSN programming II

Hands on session on programming BSN node to send/receive data wirelessly..

## Session 6: BSN Sensor and wireless programming

Hands on session on sensor data acquisition with the BSN node. This session will illustrate how to program the BSN node to acquire sensor data.

## Session 7: Wireless data path and sensor message hopping

Introduce the concept and theory of packet broadcasting, how to form wireless sensor network, and issues related to message hopping. It will also illustrate a simple multi-hop data propagation method that allows data to be collected by a central location.

## Session 8: Q & A and Conclusion