The 13th International Conference on Automation and Computing

ICAC 2007 Conference

Saturday, 15th September 2007, Staffordshire University,

Beacon Building, Beaconside, Stafford ST16 9DG, UK

For directions and maps: http://www.staffs.ac.uk/maps/

Presentation

A slot of 15 minutes is allocated to each paper, which includes presentation, questioning and answers. Normal OHPs and data projectors are available in all rooms, although power point presentation is recommended.

Conference Programme

09:30 - 10:30 Registration (The Ruxton Technology Centre, Foyer)

10:30 - 11:00 Opening Session (Lecture Theatre: F14, Beacon Building)

10:30 - 10:35 Welcome speech by Conference Chairman (Hongnian Yu)
10:35 - 10:40 Conference papers review and best paper award by Program Chairman (Wenyan Wu)
10:40 - 10:50 Guest speech by Officer in Chinese Embassy (Zongming Zhang)
10:50 - 10:55 Annual briefing by CACSUK President (Shuanghua Yang)
10:55-11:00 Introduction of "UKCC2008" (Hong Wang)
11:00-11:10 Introduction to Networked Control System Lab (Guoping Liu)

11:10-12:00 Keynote speech: (F14)

"Fault Diagnosis Issues in Disaster-stricken Industrial Complex"

Professor Akira Inoue

Graduates School of Natural Science and Technology Okayama University, Japan

Parallel Paper Sessions

12:00-13:30 Lunch	12:00-13:30 Lunch	12:00-13:30 Lunch	12:00-13:30 Lunch
Lecture Room: D-113	**Lecture Room: D-115**	**Lecture Room: D-116**	**Lecture Room: D-117**
Session 1: **Control theory and applications** *Chairs: G.. P. Liu and J. Jiang* 13:30-13:45 Evaluation of systems' nonlinear effects on output frequency responses. *X. F. Wu and Z. Q. Lang,* *University of Sheffield, UK* 13:45-14:00 A predictive control based approach to networked control systems with input nonlinearity: Design and Stability Analysis. *Y. B. Zhao, G. P. Liu and D. Rees, University of Glamorgan, UK* 14:00-14:15 Intelligent control for improvements in PEM fuel cell cathode flow performance. *J. G. Williams, G.P. Liu, S. Chai, D. Rees, University of Glamorgan, UK*	**Session 2:** **System modelling and optimisation** *Chairs: J. Wang and J. Lu* 13:30-13:45 The development and validation of physically based multi-axial creep damage constitutive equations for reheat cracking of austenitic stainless steel. *Q. Xu, University of Teesside, UK* 13:45-14:00 Transaction processing and validation based on membrane calculus for composite services. *S. W. Yao, M. J. Tang, N. Gong, Yunnan University China;* *Joan Lu, University of Huddersfield, UK* 14:00-14:15 Development of a tube-ball coal mill mathematical model using intelligent computation techniques. *P. Zachariades, J. L. Wei and J. Wang,* *University of Birmingham, UK*	**Session 3:** **Energy and Manufacturing** *Chairs: T. C. Yang and S. J. Zhang* 13:30-13:45 Investigation of XQuery mechanism in water supplying information system. *H. Li, N. Gong, D. X. Li, Yunnan University, China;* *Joan Lu, University of Huddersfield, UK* 13:45-14:00 Energy efficiency analysis of two different types of air motors. *Li Yang , University of Liverpool, UK;* *Xin Luo, Jihong Wang, University of Birmingham, UK* 14:00-14:15 Grinding temperature in high efficiency deep grinding of engineering ceramics. *Li Guo, Bo Li, Hunan University, China;* *Xun Chen, University of Huddersfield, UK*	**Session 4:** **Wireless and Network** *Chairs: S. H. Yang and X. Chen* 13:30-13:45 Increasing the lifetime of wireless sensor network based on AODV routing protocol. *Hesham Abusaimeh, Shaung-Hua Yang, Loughborough University, UK* 13:45-14:00 Design consideration from a case study for upgrading from 2G to 3G network**.** *Lizong Zhang, Anthony Atkins and Hongnian Yu, Staffordshire University, UK* 14:00-14:15 Integrating free space optics in a mobile network. *Julien Hebert, Sabir Ghauri,* *University of the West of England, UK*

14:15-14:30 Simple switch control of a pendulum-driven cart-pole underactuated system. *Y. Liu, H. Yu and T. C. Yang,* *Staffordshire University, UK* 14:30-14:45 Advanced neural network-based feedforward control on air fuel ratio of SI Engines. *Yujia Zhai and Dingli Yu, Liverpool John Moores University, UK* 14:45-15:00 A fast optimization approach in adaptive model predictive control for Air-Fuel ratio of SI engines. *Yujia Zhai and Dingli Yu, Liverpool John Moores University, UK*	14:15-14:30 Ultra-wideband transmitter modelling. *Dong Feng, Sabir Ghauri, Quan Zhu, University of the West of England, UK* 14:30-14:45 Integrated information management system model for emergency response. *Prasanna R. K. R, Yang L., King M., Loughborough University, UK* 14:45-15:00 Distributed surface fitting using shape preserving splines. *Yun Shen, University of Bristol, UK;* *Qingde Li, University of Hull, UK*	14:15-14:30 Review of UWB indoor positioning system. *Chunhua Yang and Yi Huang,* *University of Liverpool, UK* 14:30-14:45 Application of multi-agent system in process industry. *Ying Gao and Yuhong Zhou,* *University College London, UK* 14:45-15:00 Evolutionary computation enabled CAutoD search for practically-oriented multi-objective field ignition system for internal combustion engine. *Wei Chen, Fang Sun and Yun Li, University of Glasgow, UK*	14:15-14:30 Self–organising diffusion protocol for robot navigation in dynamic environment with wireless sensors. *Ping Jiang,* *University of Bradford, UK;* *Dongfei Xue, Jin Zhu, Tongji University, China* 14:30-14:45 The design and implementation of a flexible home gateway architecture. *Khusvinder Gill, Fang Yao, Shuang-Hua Yang , Loughborough University, UK* 14:45-15:00 On prediction techniques for improving the handover process in future cellular systems. *C. I. Bauer and H Yu,* *Staffordshire University, UK*

15:00-15:30 Tea Break	15:00-15:30 Tea Break	15:00-15:30 Tea Break	15:00-15:30 Tea Break
Lecture Room: D-113	**Lecture Room: D-115**	**Lecture Room: D-116**	**Lecture Room: D-117**
Session 5: **Estimation and Identification** *Chairs: D. L. Yu and J. Zhang* 15:30-15:45 Fault diagnosis issues in disaster-stricken industrial complex. *Akira Inoue and Mingcong Deng,* *Okayama University, Japan* 15:45-16:00 Using evolutionary strategies to estimate parameters of nonlinear rational models. *X. Song, Q. Zhu, and L. Lan,* *University of the West England, UK* 16:00-16:15 Incremental roadmap construction for robot path planning. *Yueqiao Li, dayou Li, Carsten Maple, Yong Yue, University of Bedfordshire, UK* 16:15-16:30 Implementation of an Actuated Inverted Pendulum on a Real-time System. *S. O. Wane, H. Yu and Y. Liu, Staffordshire University, UK*	**Session 6:** **Multimedia and vision application** *Chairs: H. J. Yang and P. Jiang* 15:30-15:45 Camera tracking in a virtual studio using the Chromatte keying fabric. *T. Bosakowski, W. Wu, P. Hughes,* *Staffordshire University, UK* 15:45-16:00 Real-time and automatic close-up retrieval from compressed videos. *Ying Weng and Jianmin Jiang,* *University of Bradford, UK* 16:00-16:15 Sensor-based SLAM algorithm for camera tracking in virtual studio environment. *P. Yang, W. Wu ,Staffordshire University, UK* 16:15-16:30 Design and implementation of domestic video surveillance systems. *Daouia F. Ghali, Zhengxu Zhao* *University of Derby, UK*	**Session 7:** **Supply chains and management** *Chairs: T. Atkins and M. H. Wu* 15:30-15:45 An investigation in BPM system within SOA. *Gang Xue, Shaowen Yao, Dexian Li, Yunnan University, China;* *Joan Lu, University of Huddersfield, UK* 15:45-16:00 Mapping between BPMN and XPDL based on XML-binding. *Hao Li, Dexian Li, Gang Xue, Yunnan University, China;* *Joan Lu, University of Huddersfield, UK* 16:00-16:15 Clinical decision support systems. *Guilan Kong, Dong-Ling Xu and Jian-Bo Yang, University of Manchester, UK* 16:15-16:30 Investigating an intelligent supplier selection system. *Jian Chen, Mian Hong Wu, Patrick Barber,* *University of Derby, UK*	**Session 8:** **Wireless and Networks 2** *Chairs: Q. M. Zhu and W. Fone* 15:30-15:45 Interactive co-simulation of OPNET and MATLAB for Networked Control System. *M. S. Hasan, Hongnian Yu, Alison Griffiths and T. C. Yang, Staffordshire University, UK* 15:45-16:00 An MASIF-based mobile agent mechanism to locate mobile agent in crossing regions. *Zongqi Li, Li Li, Shaowen Yao, Yunnan University, China;* *Joan Lu, University of Huddersfield, UK* 16:00-16:15 Real-time communication in Wireless home networks: A Survey. *Jun Wang, Sijing Zhang and Carsten Maple ,* *University of Bedfordshire, UK*

16:30-16:45 Adaptive fault diagnosis and robustness assessment under closed-loop control. *M. S. Sangha, D. L. Yu, J. B. Gomm, Liverpool John Moores University, UK* 16:45-17:00 Sensor fault diagnosis for automotive engines with real data evaluation. *M. S. Sangha, D. L. Yu, J. B. Gomm, Liverpool John Moores University, UK*	16:30-16:45 A Clinical application of robust reconstruction for X-ray computed tomography. *Julian J. Liu, Oxford University, UK* 16:45-17:00 A fast self-collision detection method for cloth animation based on improved particle-based physical model. *M. Y. Lv, F. M. L,i Y. Tang W. H. Bi, Yanshan University, China* 17:00-17:15 Fur's realistic and real-time dynamical simulation. *Tang Yong, Shao Xuqiang, Lv Mengya, Yanshan University, China*	16:30-16:45 A transferring approach- from witness model to a petri net model. *Xin Zheng, Hongnian Yu, and Anthony Atkins Staffordshire University.* 16:45-17:00 Key Components of A Real-time Global Logistics and Transport Data Platform. *Ahmed Musa and Yahaya Yusuf, University of Central Lancashire, UK* 17:00-17:15 PC-based Control System for Bench-top Micro Machine. *Lei Zhou and Kai Cheng, Brunel University, UK*	16:15-16:30 PSA: A personalisation support architecture for mobile advertising. *Chan-Cheng Chang, Yong Yue, Sijing Zhang Carsten Maple, University of Bedfordshire, UK* 16:30-16:45 A ZIGBEE based low cost home automation system. *Fang Yao, Khusvinder Gill, Shuang-Hua Yang, Loughborough University, UK* 16:45-17:00 A Snake Based Approach for Robot Path Planning in an Intelligent Environment with Distributed Vision. *Yongqiang Cheng, Ping Jiang, Fun Hu, University of Bradford, UK*
17:15-17:45 Committee meeting	**17:15-17:45 Committee meeting**	**17:15-17:45 Committee meeting**	**17:15-17:45 Committee meeting**
18:00-20:00 Conference dinner	**18:00-20:00 Conference dinner**	**18:00-20:00 Conference dinner**	**18:00-20:00 Conference dinner**

CONFERENCE FEE

The conference registration fee will be £50 for staff and £25 for students. This will cover attendance, the conference lunch, the conference banquet, refreshments, and a copy of the conference proceedings. The registration fee will be only accepted at the registration desk on the conference day.

Recommended Hotels:

If you need to stay at Stafford, the following hotels, which are in the city centre and close to the university (5 minutes walk), are recommended.

The Swan From £50 per night, 46-46a Greengate Street, Stafford, ST16 2JA http://www.theswanstafford.co.uk 01785 258 142	The Vine Hotel From £49.95 per night, Salter Street, Stafford, ST16 2JU 01785 244 112	Wyndale guest house £20 per night, 199 Corporation Street, Stafford, ST16 3LQ 01785 223 069	The Moat house £70 per night, four stars. Lower Penkridge Road, Acton Trussell, Stafford, http://www.moathouse.co.uk 01785 712217

Travel Directions to the Staffordshire University

By Train

Stafford railway station is in the town centre, about a mile and a half from the campus. Taxis stop outside the station for the short ride to the University.

There is also a frequent bus service from outside the station which goes directly to the Beaconside Campus. The number 9 Arriva bus runs approximately every 15 minutes.

Walking from Train Station or Coach Station

It takes about 30 minutes to Beaconside. See the map.

By Car

From M6

1. Leave the M6 motorway at Junction 14 (Stafford North).
2. Follow signs for Staffordshire University / RAF Stafford.
3. Carry straight on through the first roundabout onto the A513 Beaconside and pass the main entrance to RAF Stafford on your left.
4. At the next roundabout, take the A518 turning and the entrance to Staffordshire University is immediately on your left.
5. Follow the access road through the campus. Visitor parking is available in either of the large car parks. The main reception is opposite the Octagon building.

From the East

1. As an alternative to using the motorway, take the A518 to Stafford.
2. Pass the County Showground on your left and carry on until you see the large, yellow Octagon Building on your right (NB no right turn).
3. Carry on to the roundabout and turn back on yourself. The entrance to Staffordshire University is immediately on your left.
4. Follow the access road through the campus. Visitor parking is available in either of the large car parks. The main reception is opposite the Octagon building.

By Air

Manchester, Birmingham airports are all about an hour's travel time from Sheffield. Birmingham Airport is served by many domestic and international carriers and has a direct rail link to Stafford both day and night. Both London airports (Heathrow and Gatwick) are reasonably accessible by rail with just one change of train. We recommend you to allow at least two hours travel time between either of these airports and Sheffield.

Car Parking

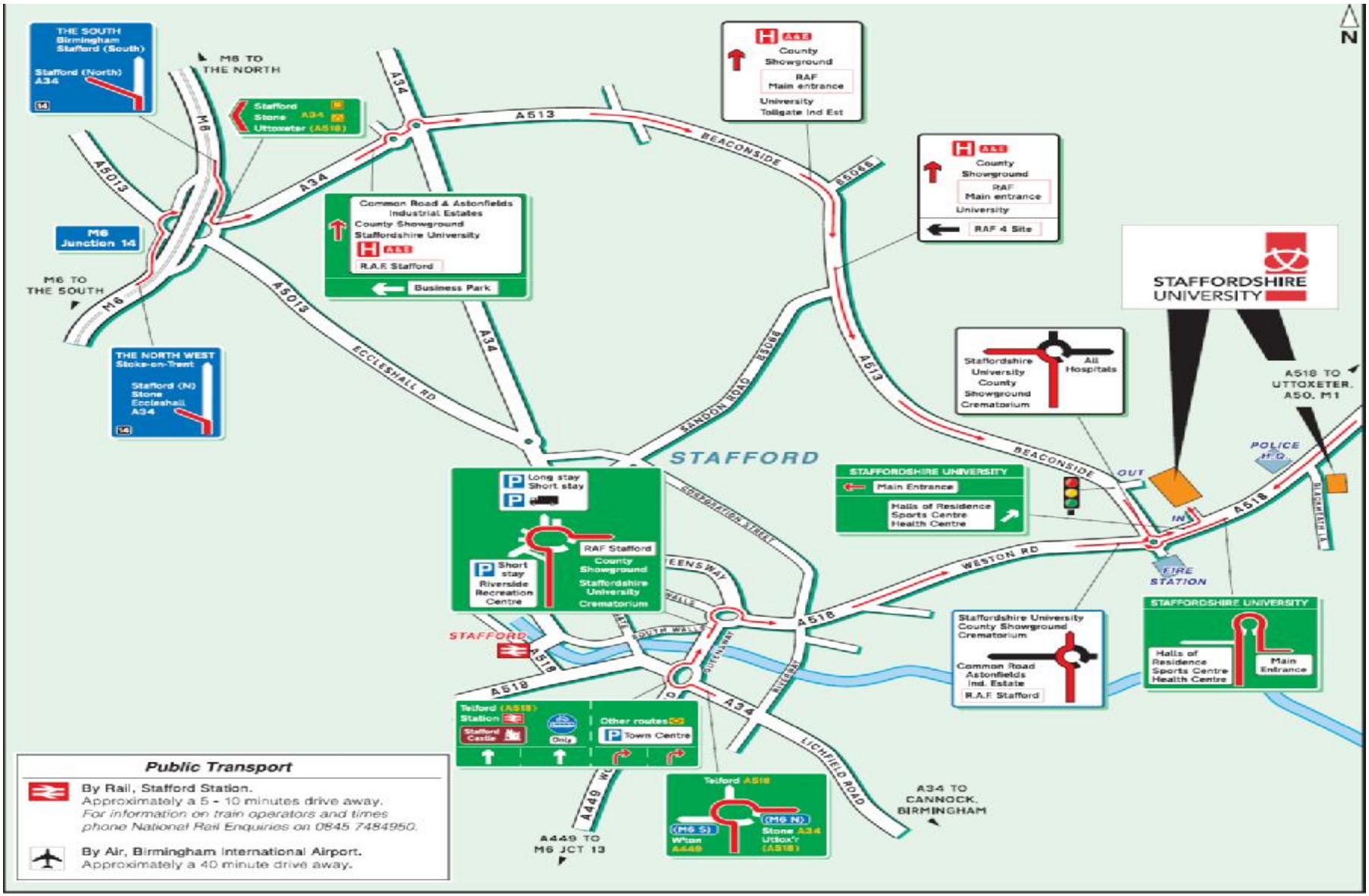
The conference site, the Faculty of Computing, Engineering and Technology, is located at Stafford Campus. There are plenty car parks available..

Help line:

01785-353324, (Wenyan Wu);

01785-2225623, 07702620322 (Po Yang)

For direction help: http://www.staffs.ac.uk/maps/


THE SOUTH
Birmingham
Stafford (South)
Stafford (North)
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M6 TO
THE NORTH
M6
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A513
BEACONSIDE
A518
Stafford
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Uttoxeter (A518)
A&E
County
Showground
RAF
Main entrance
University
Tollgate Ind Est
RAF 4 Site
M6
Junction 14
M6 TO
THE SOUTH
Common Road & Astonfields
Industrial Estates
County Showground
Staffordshire University
R.A.F Stafford
Business Park
STAFFORDSHIRE
UNIVERSITY
THE NORTH WEST
Stoke-on-Trent
Stafford (N)
Stone
Eccleshall
A34
ECCLESHALL RD
SANDON ROAD
STAFFORD
Staffordshire
University
County
Showground
Crematorium
All
Hospitals
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UTTOXETER.
A50, M1
POLICE
H.Q
Long stay
Short stay
RAF Stafford
County
Showground
Staffordshire
University
Crematorium
Short
stay
Riverside
Recreation
Centre
STAFFORDSHIRE UNIVERSITY
Main Entrance
Halls of Residence
Sports Centre
Health Centre
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WESTON RD
CONFERATION ALBERT
QUEENSWAY
SOUTH WALLS
STAFFORD
A518
A34
Staffordshire University
County Showground
Crematorium
Common Road
Astonfields
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R.A.F Stafford
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Halls of
Residence
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LICHFIELD ROAD
A34 TO
CANNOCK,
BIRMINGHAM
Public Transport
By Rail, Stafford Station.
Approximately a 5 - 10 minutes drive away.
For information on train operators and times
phone National Rail Enquiries on 0845 7484950.
By Air, Birmingham International Airport.
Approximately a 40 minute drive away.
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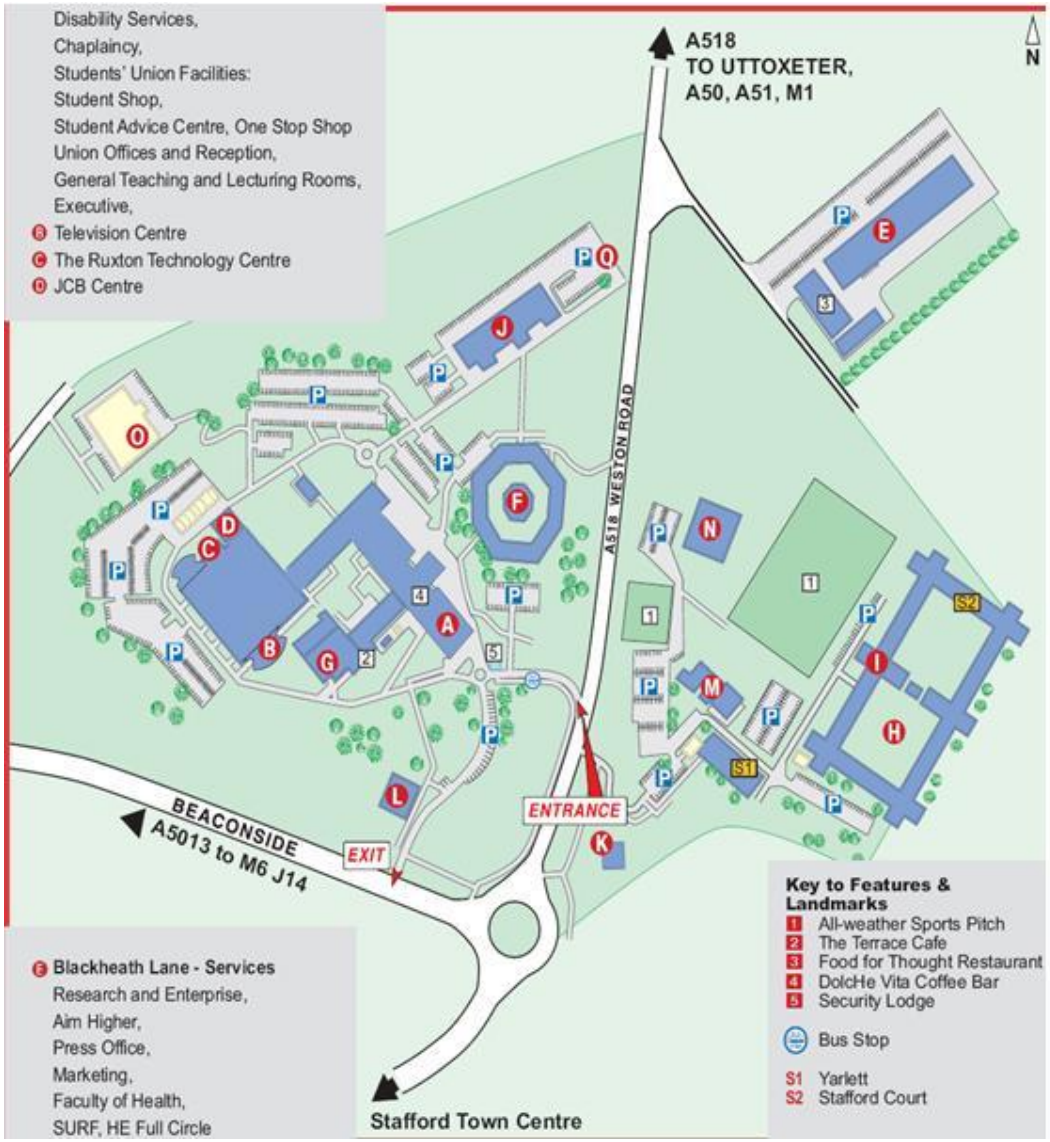

Disability Services,
Chaplaincy,
Students' Union Facilities:
Student Shop,
Student Advice Centre, One Stop Shop
Union Offices and Reception,
General Teaching and Lecturing Rooms,
Executive,

B Television Centre
C The Ruxton Technology Centre
D JCB Centre

E Blackheath Lane - Services
Research and Enterprise,
Aim Higher,
Press Office,
Marketing,
Faculty of Health,
SURF, HE Full Circle

Key to Features & Landmarks

1 All-weather Sports Pitch
2 The Terrace Cafe
3 Food for Thought Restaurant
4 DolcHe Vita Coffee Bar
5 Security Lodge

Bus Stop

S1 Yarlett
S2 Stafford Court

P Car Parks

F The Octagon
Business,
Computing,
Information Services,
General Teaching and Lecture Rooms

The Beacon Building
A Student Information Centre,
Careers and Employability Service,
Student Recruitment Centre (FCET),
Faculty of Computing, Engineering
and Technology,