

Psychology FACILITIES

School of Social Sciences, Business & Law



As a psychology student you have access to a range of first-class facilities on campus including state-of-the-art computer suites, dedicated laboratories for interviewing, interaction, cognition and biopsychology.

You will also have access to specialist neuroimaging and physiological equipment which allow you to develop practical skills in the investigation of human behaviour.

An expert psychology technician is available to demonstrate the use of the equipment, support you to use the equipment and to answer any questions that you may have.

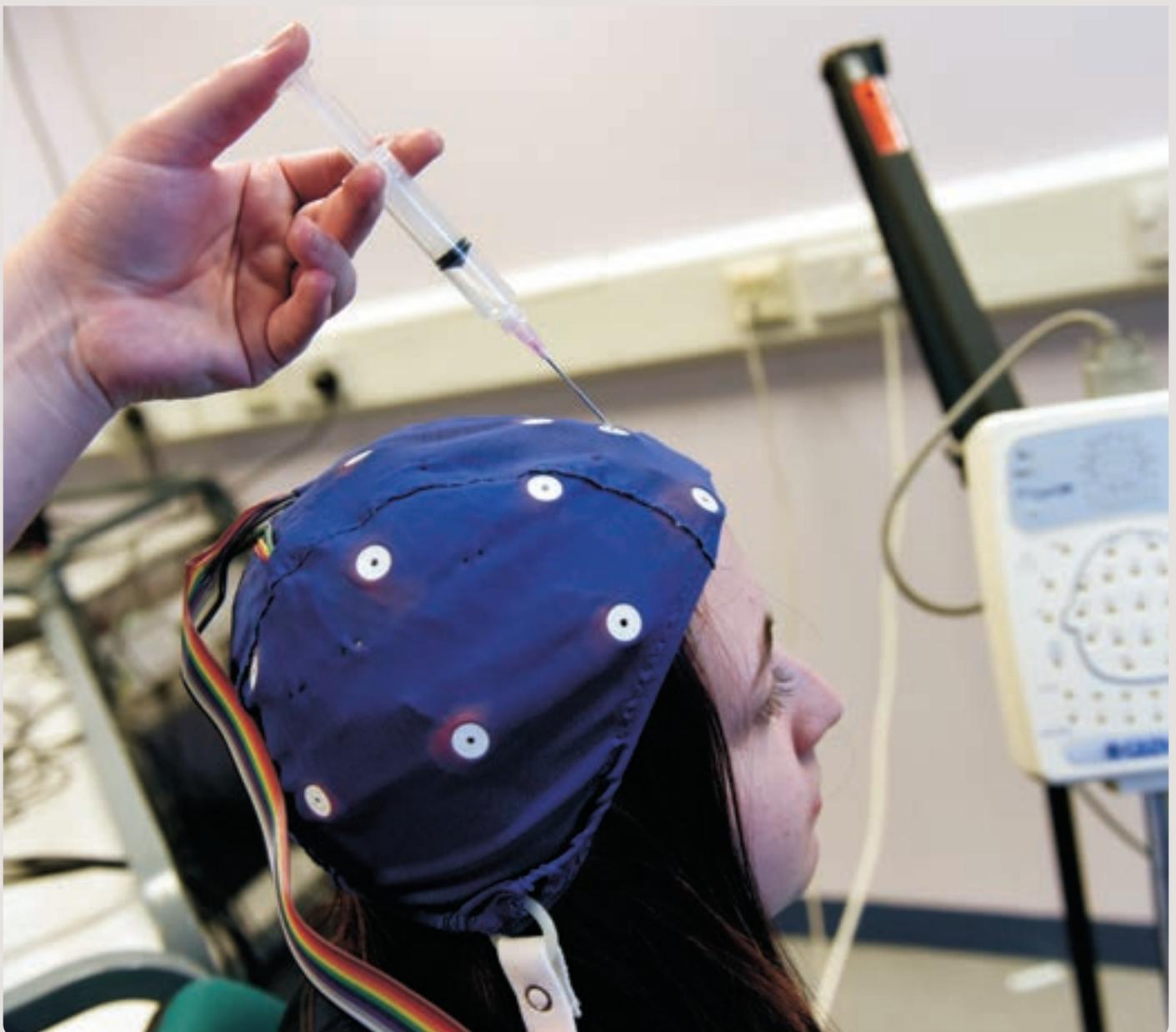
Getting involved in research

Our Research Participation Scheme encourages first and second year undergraduate students to get involved with the research that third year and postgraduate students are conducting as part of their studies.

Taking part in research will increase your knowledge of the variety of equipment available and the array of psychology research methodologies. It will expose you to more opportunities to think about ideas for the research you will conduct during your degree.

As an undergraduate, you may also have the opportunity to become a student research assistant, working with psychology staff on their current research projects. This is a paid position, and the role could involve, data collection using questionnaires or experiments, conducting interviews, data analysis and literature searching and reviewing.

Additionally, you may be selected to present the research at a conference and/or to write a research report or academic article with the project lead. The scheme allows you to put into practice the skills and knowledge you develop during your degree and to further develop your research skills by working with an authentic research project. Great for your CV too!



Neuroimaging equipment

Transcranial Doppler (TCD)

This is a type of Doppler ultrasonography that measures the velocity of intracerebral blood flow through the brain's vessels in the Circle of Willis. It quantifies the echoes of ultrasonic waves, through a transducer, that move through the cranium and is a non-invasive, inexpensive and a safe technique.

It's a small and portable device which can be used within a clinical setting and for research purposes. The TCD comes equipped with a report setting which gives standard deviations, means, and averages, and ultrasonic wave visualisation and breakdown.

Within psychology the TCD can be used to identify changes in the ultrasonic waves to offer insights into various aspects of psychopharmacology, attention, memory, decision-making, and problem solving.

Russel Best, a PhD student, is assessing how menthol and carbohydrate compare in terms of brain blood flow with the TCD focusing on key vessels.

Russel's research stems from previous investigations into menthol and its increasing popularity in sport and exercise settings.

Menthol works to improve performance in several ways, lowering an athlete's perception of and improving their comfort in the heat, as well as increasing ventilation. But little is known as to how menthol compares to other, more commonly used, sports supplements such as carbohydrate.

Dr Jonathon Reay, associate dean, has also used the TCD to investigate the effects of supplements (resveratrol) on cerebral, blood flow, cognitive function and mood.

Electroencephalogram (EEG)

This system is an electrophysiological monitoring technique which records the electrical activity of the brain. Readings are taken from up to 64 individual electrodes and it's non-invasive. The electrodes, which are in a fitted cap, are placed along the scalp.

The EEG measures the fluctuation of voltage which result from an ionic current within the brain's neurons. The software attached to this device can process, analyse, and visualise 64 channels of EEG data simultaneously. You will also see a temporal visualisation of the data and have access to topographic displays and whole head mapping of average waveforms.

EEG techniques are used in a variety of areas of psychology including cognition, biopsychology and clinical psychology. For example in clinical psychology, an EEG would enable the documentation of spontaneous electrical activity of the brain over a period of time. This information has diagnostic applications focusing on the type of neural oscillations that can be found in epilepsy, sleep disorders, cognitive functioning, psychological disorders, and stress.

Dr Jonathon Reay has used the EEG to explore any changes in brain activity following the consumption of food and/or supplements purported to benefit health. Dr Daniel Eaves, senior lecturer in sport and exercise, has published his use of the EEG system to support his research into motor control, imitation and motor imagery.

Functional Near Infra-Red Spectroscopy (fNIRS)

This equipment is a non-invasive brain imaging system that provides real time monitoring of tissue oxygenation within the prefrontal cortex. A 16-channel sensor placed around the forehead measures the concentration of chromophore with near infrared light. The differences in the absorption spectra of deoxygenated haemoglobin (blood) and oxygenated haemoglobin allows for the quantification of the relative changes in the concentration of haemoglobin at multiple wavelengths. This device can be attached to other cognitive programs such as SuperLab to be able to mark and record the difference in the stimuli presented. The analysis software attached to this equipment is capable of processing, analysing and visualising the 16 channels of fNIRS data. It can also display a temporal visualisation including brain mapping and visualisation of data over brain surface images.

Related areas of psychological research include psychopharmacology – the study of the effect of taking various supplements on brain function. The fNIRS is often used in cognitive research such as attention and memory, decision-making, and problem solving. Laura Sexton, graduate tutor in psychology used the fNIRS equipment to explore neurological responses to anti-smoking health campaigns. Dr Jonathon Reay has used the fNIRS to investigate the effects of the resveratrol supplement on blood flow in the cerebral cortex, cognitive function, and subjective mood.

“During my undergraduate dissertation project in which I have investigated flavour perception, I had the opportunity to use a range of great facilities at Teesside, including the Individual experiment labs and specialist computerised software to create experimental tasks. The University's state-of-the-art equipment alongside the supportive staff has provided me with the best experience and opened up many more opportunities for further research projects.”

Natalie Weldon | BSc (Hons) Psychology



Physiological equipment



Eye tracker

The eye tracker is used to measure point of gaze (where a person is looking). It involves a head mounted system for the binocular tracking of eye gaze, saccades and fixations, which is attached to two monitors and computers.

The CRT monitor and computer are responsible for all the programming aspects of the experiments. This monitor is also the screen that the participant will be asked to look at throughout any eye-tracking experiment. The monitor's four corner trackers aid accuracy of the recordings. The LCD monitor and computer are the control panel. The researcher can set up the equipment to the specification of the individual from this screen.

This equipment can be used in research involving the visual system including psycholinguistics, marketing, attention, facial recognition, and eye witness testimony to name a few. Our eye-trackers are suitable for both lab and field based experiments.

Dr Natalie Butcher, senior lecturer in psychology, uses the Eyelink eye tracker to support her research on face recognition (ie the act of identifying someone from their face).



“While working as a student research assistant during my undergraduate degree in psychology, I was given the opportunity to learn how to set up and use the eye-tracker to collect experimental data to investigate how people recognise faces. It was a great experience learning how to incorporate this specialist technology into psychology research and the experience gave me insight into how the eye-tracker can be used in future research.”

Georgie Rayment | MSc Health Psychology and Clinical Skills

Biopac

This device is a physiological measurement system where students can easily record data from 19 different bodily responses. It contains over 60 experiments and is connected to a corresponding laptop making it portable.

Built in step-by-step set up guides outline the measurement of the cardiovascular system, pulmonary function, autonomic nervous system, and galvanic skin response.

The electrodes and transducers indicate if the data they are collecting is good or bad (ie if the sensor has not been connected properly then it would indicate bad data). Once the data has been collected inbuilt analysis software allows students to make general comparisons from the amplitude and frequency of the data.

This equipment can be used to investigate various areas of psychology that are interested in physiology. For example it can be used for lie detection, understanding psychophysiology associated with anxiety, stress and other health concerns as well as understanding exercise physiology within the field of sport psychology.

Dr Stephanie Kilinc, senior lecturer in psychology, uses the Biopac to support her undergraduate and postgraduate teaching, for example to conduct case studies examining both the impact of stress on the body and the efficacy of various behavioural changes and complementary therapies as stress reduction techniques.



Physiology lab with Hormone Assay equipment

This lab in the Olympia building is equipped with many facilities related to sports psychology, including the Hormone Assay test kits which can be used to test testosterone and cortisol, which are both found in saliva. The saliva is then mixed with specific chemicals that bond to the hormone and are then separated using a centrifuge and calculated using the analysis system.

The kit has a built in analysis system which enables the researcher to examine the changes of the hormone levels pre- and post-intervention. In previous research, the measure of cortisol levels has been linked with increased stress, aggression, anxiety, depression, shyness and inhibition and decreased memory performance. Therefore this kit can be used within a health and cognitive psychology settings.

Other equipment

Virtual reality

Our virtual reality system enables the user to step into a 360-degree environment with a light-weight headset with rotational and position tracking. The high quality resolution, refresh rate, and set up for each OLED eye panel, means the user does not experience motion blurring or judder.

The use of virtual reality (VR) in psychological research is relatively new but is a quickly expanding area of research. For instance VR enables researchers to explore the effect of VR-based interventions on individuals within health psychology, for example rehabilitation in pain control and management. Cognitive psychologists also use VR to support research on perception and building information modelling.

This equipment is designed so that programme development is possible allowing researchers to expose their participants to environments that are often more realistic than the traditional psychology lab. Dr Christopher Wilson, senior lecturer in psychology, uses VR to support his research in attention and perception.

CANTAB (Cambridge Neuropsychological Test Automated Battery) Eclipse

This is a small portable kit computer- based battery version of the Cambridge Neuropsychological test assessing a range of cognitive functions including attention, memory, executive function such as planning and decision making.

It allows students to gain practical experience of administering the types of tests that would be used in professional settings (for example; NHS, prisons, schools) in order to measure intelligence and diagnose cognitive deficits.

CANTAB has been used to support teaching within our Cognitive Psychology and Current Issues in Neurodevelopmental Disorders modules. Students are encouraged to use this equipment for a variety of psychological dissertation projects.

Dr Janice Bartholomew, senior lecturer in psychology, has used this to explore psychopharmacology, investigating the effect of recreational drugs (such as alcohol, nicotine, and cannabis) on cognitive performance.

Specialist rooms

Computer labs

All the computer labs throughout Clarendon are all fully equipped with Microsoft Office, SPSS, and specialist psychology programming software (PCQwin, NVivo, SuperLab, and Audacity). They are large rooms, which comfortably hold between 20-30 people. They are often used to accompany teaching but can also be used for student research if a large room is required to accommodate their sample.

These labs are used to conduct research in many different areas of psychology. Dr Natalie Butcher has used these group-testing labs to conduct her research on the embodiment of emotion (ie how individuals process and represent emotional information) which she conducts with collaborators around the world (Sweden, Colombia, India, Australia, Germany and Japan) in order to investigate any cultural differences. Use of the group-testing lab is important to this research as it allows multiple participants to take part simultaneously, which is important when a large sample of participants is needed for the research. Like the individual experimental labs, the group testing labs also have access to SuperLab.

Individual experiment labs

The experiment lab can be used in many fields of psychological research. Dr Natalie Butcher has used it to conduct her research on face recognition (ie the act of identifying someone from their face). Face recognition research aims to understand the processes involved in learning new faces and then being able to recognise that face at a later date. Participants are given tasks that require them to identify famous faces or learn new faces under various different conditions. Use of the experiment lab is important for this research as it allows the participants to complete the face recognition tasks in quiet rooms, with no distractions that might impact on their performance. Importantly the experiment lab also has access to specialist programming software that is often used to programme the face recognition experiments.

Interview rooms

The interview rooms can be used to conduct a variety of qualitative research projects from one to one interviews to small focus group discussions. Dr Sue Becker and her dissertation students have used these rooms to conduct a range of qualitative research projects investigating topics as diverse as the experience of supervising qualitative research projects and exploring perceptions of bisexuality. The Student Academic Literacy Tool (SALT) project also made use of these rooms to interview staff and students on their perceptions of academic writing in order to design the award winning SALTapp, a writing tool which addresses and helps with different aspects of academic writing.

Interaction labs

The interaction lab facilities include a one-way mirror and video-recording equipment to enable students to engage in research interviews, role-play exercises and simulated client-therapist interactions involving individual as well as group therapy.

Dr Judith Eberhardt, senior lecturer in psychology, incorporates the lab into teaching sessions for practicing and assessing counselling and interview skills. Judith's students devise each session and practice on other students within the group. This experience can be implemented in a real world setting with clients and research participants.

These labs have also been used for training purposes whereby fully trained counsellors demonstrate to students what a therapeutic session would comprise.

The labs have also been used within forensic psychology in the study of investigative interviewing by Dr Kimberly Collins, senior lecturer in forensic psychology. Like counselling, they are used for research and training purposes whereby the session would not be interrupted, but still be observed.

“The facilities that the University offer are in every way beneficial to each and every student. Throughout the course of my dissertation I have had every opportunity to get the very best outcome that I could. The available facilities have made the dissertation journey a lot less stressful. Testing my research idea based on the effect of dyslexia and self-esteem on face recognition was aided by the excellent computer software available, which I was able to administer to multiple people at once through the ability to book computer labs. The staff have also gone above and beyond to allow me to carry out my dissertation. At every opportunity, they have made themselves available to offer any help and guidance they could and I truly believe that any success I obtain is partly down to them and the outstanding facilities.”

Jamie Sinar | BSc (Hons) Psychology and Counselling



Questionnaires

Students can access up to 500+ questionnaires, which can be used for research purposes. Questionnaire topics include aggression, alienation, anxiety, attitudes, body image, depression, leadership, focus of control, memory, motivation, pain, health and illness, personality, stress, weight and diet, and values.

As a psychology student if you need a particular questionnaire during your studies that is not currently available from the University, our dedicated psychology technician will happily search for it and gain access to the questionnaire for your use.



Mock courtroom

Teesside University is one of a handful of UK universities nationally that has a mock courtroom available for use in teaching and research. The mock court room has been sworn in, which means it can be used for court procedures by Teesside County Court. The courtroom is used by undergraduate and postgraduate forensic psychology students. It is also used for expert witness testimony practice, which is an invaluable skill to learn when studying with aim of becoming a psychologist. We also carry out mock trials in the courtroom to help students understand the psychological mechanisms that underpin practice in the courtroom, and jury decision-making.

Many final year students use it for their dissertation projects by filming mock trials and asking participants to act as mock jury members. Students and staff also use the mock courtroom to carry out various research projects. Dr Kimberly Collins' research in to children's communication was investigated through a registered intermediary and a live link in the courtroom.

Mock police station

The mock police station includes a waiting room, front desk, interview room and seminar room. Security cameras are throughout, which can be viewed live on a large TV in a separate seminar room.

Like the mock court-room, the mock police station is used in teaching and research by students and staff which relate to investigative interviewing and role play scenarios.

Dr Kimberly Collins integrates the use of this area within teaching whereby students are encouraged to play the role of both the offender and the police officer. This develops knowledge and widens understanding of what it is like to be in both situations from a psychological perspective.



Get in touch

For undergraduate course information visit tees.ac.uk/ug/psychology, and for postgraduate course information visit tees.ac.uk/pg/psychology

For admissions queries or to talk about your qualifications call: **01642 342807**

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