



Course Information Form

This Course Information Form provides the definitive record of the designated course

General Course Information

Course Title	Special Needs and Inclusive Education Special Needs and Inclusive Education (with Professional Practice Year) Special Needs and Inclusive Education with Foundation Year
Qualification	BA (Hons)
FHEQ Level	6
Intermediate Qualification(s)	
Awarding Institution	University of Bedfordshire
Location of Delivery	AB
Mode(s) of Study and Duration	Full-time over 3 years or 4 years for practice year and foundation year routes Part-time pathway typically over 6 years
Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement	
UCAS Course Code	X360; with Professional Practice year X108; with Foundation Year X4FY
External Benchmarking	QAA Quality Code Section A 1 descriptor for higher education qualification at level 6 QAA Education Studies subject benchmark statement 2015 FHEQ level 6
Entry Month(s)	October and February

Why study this course

This multi-disciplinary course aims to deepen and extend your knowledge of concepts and theoretical frameworks central to understanding special needs and inclusive education. The course includes discussion of theories, policies and practices related to special needs and inclusive education, both UK-based and international. The course will enable you to develop your own interests, potentially aligned to a future career in the area of special needs and

inclusion. The course provides a pathway towards a diverse range of careers in education, or a related areas, such as a teacher, specialist support role, or charity sector.

Educational Aims

The practical application of theories relating to special needs and inclusive education is a key focus of this course which aims to prepare you for employment in special and inclusive education settings, and for further study in the area. This course aims to support you in developing the knowledge and skills to work with children and/or young people with special educational needs and/or disabilities. It also aims to equip you with the ability to influence attitudes and practices in a range of educational settings and thereby improve the quality of education for children and young people with special educational needs and/or disabilities. The course is both academic and practical. A broad-based first year introduces you to key higher education skills, and educational theories and ideas in the field of special needs and inclusive education. In subsequent years you will explore a range of topics including current national and international policy developments in special educational needs and inclusive education and the roles of a range of professionals in the workplace. You will examine issues related to communication and interaction, cognition and learning, sensory and physical impairments and social, emotional and behavioural issues. You will be required to engage with key policy and theoretical developments in special needs and inclusive education, and the impact of these developments in practice. You will consider international perspectives in the field, reflect on your own experience at your placement, develop an interest in research and engage in current debates around special needs and inclusive education. You will also be encouraged to engage with the lived experiences of individuals with special needs and/or disabilities in order to develop an in-depth understanding of what inclusion means in practice.

- To enable you to identify and discuss different disciplinary approaches to the study of Special Needs and Inclusive Education from 0 to 25.
- To develop your skills in research, critique and challenge in relation to current perspectives on policy and practice about education and SEND
- To develop your ability to examine critically and in-depth national and international dimensions of Special Needs and Inclusive Education , in a climate of rapid social, educational, political, economic and technological change.

Course Structure

The Units which make up the course (including the Professional Practice Year as applicable) are:

Unit Code	Level	Credits	Unit Name	Core or option
EDC040-1	4	30	Key Concepts in Special Educational Needs	C
EDC054-1	4	15	Early Child Psychology	C
EDC049-1	4	15	Psychology of Adolescence	C

EDC048-1	4	30	Narratives of Childhood	C
EDC057-1	4	15	Contextualising Special Needs and Inclusive Education	C
EDC052-1	4	15	Understanding the Workplace	C
EDC021-2	5	30	Investigating the Social World	C
EDC064-2	5	15	The Professional Workplace	C
EDC049-2	5	30	Inclusive Curriculum and Pedagogy	C
EDC063-2	5	15	Developing Teaching Practice*	O
EDC062-2	5	15	Developing Professional Practice*	O
EDC067-2	5	15	The Lifelong Curriculum	O
EDC068-2	5	15	Policy and Practice in Special Educational Needs and Disability	O
EDC061-2	5	15	Deschooling	O
EDC069-2	5	15	Children Young People and the Digital Age	O
EDC055-2	5	0	Professional Practice Year (Education and English Language)	Core for degree with PPY
EDC207-3	6	30	Dissertation	C
EDC154-3	6	30	Critical Debates in SEND Education	C
EDC172-3	6	15	Perspectives on Pedagogy and Behaviour	O
EDC173-3	6	15	Communication Language and Learning	C
EDC203-3	6	15	Beyond Professionalism	O
EDC206-3	6	15	Contemporary Debates in Education, Childhood and Youth	O
EDC212-3	6	15	Children Young People and the Media	O

EDC165-3	6	15	Technology Enhanced Education	O
EDC204-3	6	15	Children and Young People's Wellbeing	O
EDC209-3	6	15	Representations of Disability	O
EDC208-3	6	15	Children's Literature	O

*** Students must take one of these two units.**

Additional Course Costs

All students require a DBS to be obtained on commencing their course in L4, 5 or 6. Students will need to pay for this check. Details of the DBS clearance (including current costs) can be found at www.gov.uk/disclosure-barring-service-check/overview

Entry requirements

Standard university entrance requirements:

Standard entry requirements for UK students –

<http://www.beds.ac.uk/howtoapply/ukugentryreqs>

Students from the European Union - <http://www.beds.ac.uk/howtoapply/eu/guides>

International students - <http://www.beds.ac.uk/howtoapply/international/apply>

DBS (Disclosure and Barring Service) clearance at the outset of the course is also required. You will be assisted in completing the DBS application by University staff and the DBS will be processed through the University. Without a DBS you may not be able to appropriately complete the compulsory work placements within core units. Any issues that may come to light will be referred to the Faculty 'Fitness to Practice Committee' for consideration prior to commencement of any work-based learning.

Graduate Impact Statements

The course has been designed to develop graduates who are able to:

- Use their knowledge and understanding of key aspects of the field of special needs and inclusive education to influence attitudes and practices in a range of educational settings and thereby improve the quality of education for children and young adults (0 to 25);
- Critically evaluate evidence in educational settings in order to make judgments and solve problems to ensure more effective inclusion of children and young people with special needs and/or disabilities;
- Exercise initiative and personal responsibility in making decisions in complex situations that have the potential to improve the educational experiences of a range of learners.

Course Learning Outcomes

1. Demonstrate knowledge and systematic understanding of the key aspects of the

field of special educational needs and inclusion and appreciate the uncertainty, ambiguity and limits of knowledge within the field.

2. Plan prepare, evaluate, and analyse a small scale research project with reference to relevant theoretical frameworks in special needs and inclusive education.
3. Evaluate and critique a range of theories and perspectives underpinning the study of special needs and inclusive education in national and international contexts.
4. Engage with critical debates relating to current issues in special educational needs and inclusive education in national and international contexts.
5. Have developed and be able to reflect on the skills necessary for the 21st century multi-disciplinary workplace.
6. Understand that professional and ethical behaviour is a key requirement of entrants to graduate careers in the field of special needs and inclusive education.
7. Organise, present and communicate information, ideas and opinions, related to concepts and ideas in special needs and inclusive education in spoken and written format to both specialist and non-specialist audiences.

In order to qualify for the award of BA (Hons) Special Needs and Inclusive Education (with Professional Practice Year) students will need to meet all of the outcomes above and:

8. Demonstrate knowledge and analytical understanding of the behaviours associated with the workplace by successfully completing an approved placement.

PSRB details

None to note

Learning and Teaching

Entry cohorts to the course are characterised by diversity in subject specific, practical and transferable skills and so the first level (year) of study (Level 4) introduces you to key ideas and skills that you will need to develop in order to succeed in HE. Some teaching and learning skills in Level 4 will be personalised to reflect this and there will be a number of opportunities for individual tutorials with staff to allow you and them to reflect on your on-going development. The Introduction to Degree Study unit aims to facilitate your transition to degree level study in the context of the subject and will focus on key academic skills and act as an extended induction programme as you go through your first Level of study. Personal Academic Tutoring (PAT) and the University Peer Assisted Learning (PAL) programme will also be associated with this unit. PALs are experienced students from Levels 5 and 6 who can help support your transition to higher education and give you the benefits of their prior experiences.

At Level 4, the focus is more on lectures as a means of delivering core material. However, you will also have regular seminars and workshops where you will be able to develop your experience of working in groups, communication of ideas and personal confidence. Use will be made of the excellent ICT facilities that are available within the University and ICT and information gathering skills will be developed during Level 4 to allow you to better support your own independent study. Sessions may take place in lecture theatres, smaller seminar rooms, or specialist learning resource facilities, for example the ICT training suites.

In Levels 5 and 6 of the course the emphasis on lectures decreases with a higher proportion of seminar and workshop sessions. This aims to encourage your independent study skills, introduced in Level 4, to be further developed with the core Research Methods unit in Level 5 providing further development opportunities alongside an enhancement programme that is available to all students. The enhancement programme will offer you the opportunity to consider your graduate career in detail and to work closely with staff to develop your awareness and academic skills. This enhancement programme will be extended in Level 6 where it is run alongside the core dissertation unit.

Throughout the course extensive use will be made of the University Virtual Learning Environment (VLE) to provide you with information and further materials for your study and facilitate interaction and discussion between students and between staff and students.

This course is taught by a core group of lecturers with recent expertise and experience in a range of educational settings. This core team will support you in your academic development and we strongly advise our students to take advantage of the opportunities for 1 to 1 tutorials in staff office hours and through the PAT system to fully maximise their own potential and learning.

Assessment

This course aims to provide a range of assessment methods to support the diverse needs of all learners. Assessments include exams, essays, reports, posters, case studies, and presentations. The assignments will build directly on the teaching sessions and you will be supported by lecturers to complete the assignments. Substantial guidance is provided on the VLE and in detailed assessment briefs. In level 4 more support is provided in the form of formative assessment opportunities. You will also have more hours dedicated to guided (staff directed) learning activities in level 4 compared to later in the course. There are opportunities for 1 to 1 and group tutorials to support the assessments both within units and in personal tutorials and staff office hours.

The overall purposes of assessment in this course are:

1. to support your learning through formative feedback on your practical and academic performance;
2. to measure your achievements against the specified learning outcomes of the unit and course;

to provide a reliable and consistent basis for boards of examiners to determine your level of achievement and progression as evidence for the conferment of a named award.

Assessment Map

Unit Code	Core/Option	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
EDC040-1	C					CW-ess									CR-jour																
<i>Narratives of Childhood</i>	C																												CW-ess	PJ-exhib	
EDC030-1	C											CW-C S																			
<i>Psychology of Adolescence</i>	C																									CW-Ess					
<i>Understanding the workplace</i>	C																													PR-viva	
EDC033-1	C												CW-Ess																		
EDC055-2	O																														CWRW

Unit Code	Core/Option	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Developing prof Practice	O											P R-oral																		
Dev Teaching Practice												P R-oral																		
EDC047-2	O												W R-post																	
EDC046-2	C														C W-C S															
EDC049-2	C							C W-ess					W R-pr ob																	
EDC021-2	C																				E X-PT								W R-I	
Professional Workplace	C																										W R-W B			
Deschooling	O																													C W-O T
EDC027-2	O																													C W-ep ort

Developing your employability

Employability is central to the course both within the curriculum and in the extra-curricular activities promoted by the course team. The course provides you with an opportunity to gain vital work experience in an educational setting. A 30-credit optional work-based learning unit (Understanding the Workplace) is available to all students in level 5. This unit will allow you to explore a workplace of your choice and to gain experiences relevant to your intended career. An optional teaching unit is offered at level 6 (Developing Teaching). This unit will give guidance on applications to teacher training and explore pedagogy. Two other optional units with five day work placements are available to all students at level 6. In addition, we promote a range of opportunities to become involved in local organisations as a volunteer or if possible in a paid role. In conjunction with the careers and recruitment service we hold an education fair each year with a wide range of visiting organisations, for example Autism Bedfordshire offering voluntary positions. Students are expected to take their workplace experiences into the University classroom and to learn from practical experience how their theoretical knowledge can be applied.

Within lectures and seminars there are opportunities to examine case studies and videos from across the educational services. A range of guest speakers and specialist part time lecturers are invited in to provide additional links and support your awareness of professional practice in context. Guest speakers are used for specialist input in the following units:

Level 4:

- Contextualising special needs and inclusive education

Level 5:

- Policy and Practice in Special Educational Needs and Disability (SEND);

Level 6:

- Communication, Language and Learning;
- Critical Debates in special Educational Needs and Disability (SEND);
- Perspectives on Pedagogy and Behaviour

In addition, the nature of the course content focuses on providing the knowledge and practical experience to seek out professional education careers with people of all ages (child-adult) and you may be able to further develop your skills and experience through the placement year option.

You will be able to work with your personal tutor to develop an on-line resource of career relevant materials, including a graduate level CV and work experience log. The enhancement programmes in levels 5 and 6 will have a strong focus on your graduate career with advice sessions on developing your CV and making applications.

After Graduation

Successful completion of the BA (Hons) Special Needs and Inclusive Education degree programme will enable you to enter a diverse range of careers. You will be in a strong position to apply for a primary teacher training programme (e.g. a PGCE or school led course) if desired. Teachers with this degree may choose to eventually teach in a range of educational settings, including special schools. They may subsequently follow routes (eg a SENCo course) to become Special Educational Needs Co-ordinators (SENCOs) in their schools. Other career paths include specialist graduate teaching assistants within educational settings, working within Local Authority Support Services for children and young people with SEND, working in Early Years settings as a specialist in SEND, and non-government organisations such as charities, for example current students are working with Autism Bedfordshire and Bedford and District Cerebral Palsy Society. A number of graduates may also continue their studies with specialist Masters courses or PhD research. The University Careers and Recruitment service

can continue to advise you in your early career and your Personal Academic Tutor will provide application references on request.

Additional Information

Student Support during the course

All students will be allocated a Personal Academic Tutor (PAT) at the start of the course. The tutor will provide academic coaching through your time at the University and will be able to act as a referee, writing references for voluntary or paid positions that you apply for during and at the end of your degree. Meetings in small groups or one to one will take place each academic year to review your academic progress, career intentions and suggest actions that you can take to improve your learning. The course operates an extended induction programme, starting with pre-course guidance, through an initial induction week and then into the course which is located within core units that all students will follow. We also offer an enhancement programme in levels 5 and 6 to support students applying into graduate positions such as teacher training.

Lecturers are able to advise students and refer you to a range of support services including PAD (Personal Academic Development – which offers academic support resources) SID (Student Information Desk – which offers a drop in and online service for academic and non-academic advice, for example on learning support, arrangements for students with disabilities or specific learning difficulties or guidance on mitigating circumstances for assessments). Lecturers will also refer students to the on-line resources that are able to support your learning, for example the Study Hub on-line within the University's VLE (Virtual Learning Environment) or the material that can be found on the Learning Resources website. Extensive use is made of the VLE to provide supporting materials for each unit that you study and to deliver interactive learning experiences.

Course Equality Impact Assessment

Question	Y/N	Anticipatory adjustments/actions
The promotion of the course is open and inclusive in terms of language, images and location?	Y	
Are there any aspects of the curriculum that might present difficulties for disabled students? For example, skills and practical tests, use of equipment, use of e-learning, placements, field trips etc.	N	
Are there any elements of the content of the course that might have an adverse impact on any of the other groups with protected characteristics ¹ ?	N	
If the admission process involves interviews, performances or portfolios indicate how you demonstrate fairness and avoid practices	N/A	

¹ Age, Gender reassignment, Marriage and civil partnership, Pregnancy and maternity, Race, Religion and belief, Sex, Sexual orientation

that could lead to unlawful discrimination?		
Confirm that you have considered that the course learning outcomes and Graduate Impact Statements are framed in a non-discriminatory way.	Y	
Confirm that the course handbook makes appropriate reference to the support of disabled students.	Y	

Administrative Information – Faculty completion	
Faculty	Education and Sport
Portfolio	Undergraduate Education and English Language
Department/School	SEEL
Course Coordinator	Christina Kuegel
Trimester pattern of operation	Oct (Trimester 1), Feb (Trimester 2)
PSRB renewal date (where recognised)	
Version number	1/17
Approved by (c.f. Quality Handbook ch.2)	University Approval
Date of approval (dd/mm/yyyy)	February 2017
Implementation start-date of this version (plus any identified end-date)	September 2017
Study model type (e.g. study centre)	On campus

Form completed by:

Name:Dr Philip J. Wright..... **Date:** ...December 2016.....

Authorisation on behalf of the Faculty Teaching Quality and Standards Committee (FTQSC)

Chair:

Date:

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Course Updates

Date (dd/mm/yyyy)	Nature of Update	FTQSC Minute Ref:
December 2016	Change to new CIF template and semesterisation of the course. Housekeeping.	

Administrative Information – Academic Registry completion	
Route code (post approval)	
JACS / HECoS code (KIS)	
SLC code (post approval)	
Qualification aim (based on HESA coding framework)	



Annexes to the Course Information Form

*These annexes will be used as part of the approval and review process and **peer academics** are the target audience.*

General course information

Course Title	Special Needs and Inclusive Education Special Needs and Inclusive Education (with Professional Practice Year) Special Needs and Inclusive Education with Foundation Year
Qualification	BA (Hons)
Route Code (SITS)	BASNIABF, BASNPABF, BASNFABF
Faculty	Education and Sport
Department/School/Division	SEEL
Version Number	1/17

Annex A: Course mapping of unit learning outcomes to course learning outcomes

Unit code	Key Concp	E Psych	Psych Ad	Narr. CH	CSIE	Und Work	RM	Prof Work	Inc Curr	Dev Teach	Dev Prof	Life Curr	SEND P&P	De Sch	Dig Age	PPY		
Level	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5		
Credits	30	15	15	30	15	15	30	15	30	15	15	15	15	15	15	0		
Core or option	c	c	c	c	c	c	c	c	c	o	o	o	o	o	o			
Course Learning Outcome (number)	<i>Insert LO1 and/or LO2 for each unit into cell corresponding to the course learning outcome</i>																	
1	Lo1				Lo1				Lo1				Lo1					
2							Lo2											
3	Lo2	Lo1	Lo1	Lo1	Lo2				L02				Lo1		Lo1			
4													Lo2					
5							LO2		Lo2		LO1	LO1				Lo1		
6							Lo1		LO1		Lo2	Lo2						
7		Lo2	Lo2	Lo2				Lo1					Lo2		Lo2	Lo2		
8 (PPY)																	LO1,LO2	

Unit code	Diss	Deb SEND	Ped Behav	Comm L&T	Bey Proff	Pol Deb	CYP Media	Tech	Well being	Rep Dis	Chil Lit						
Level	6	6	6	6	6	6	6	6	6	6	6						
Credits	30	30	15	15	15	15	15	15	15	15	15						
Core or option	c	c	o	o	o	o	o	o	o	o	o						
Course Learning Outcome (number)	<i>Insert LO1 and/or LO2 for each unit into cell corresponding to the course learning outcome</i>																
1	LO2		Lo1	Lo1					Lo1	Lo1							
2	LO2	Lo2															
3	LO1	LO1	Lo2				L01	Lo1	Lo1	Lo2	Lo2						

4	LO1	Lo1,LO2		Lo2		LO1											
5	LO2	LO1			LO1		Lo2	L02	LO1								
6	LO1,LO2	LO1			LO1, LO2												
7	Lo1					L02											
8 (PPY)																	

Annex C: Course mapping to FHEQ level descriptor, subject benchmark(s) and professional body or other external reference points

One set of mapping tables to be produced for the course and each named intermediate qualification

Course (or intermediate) qualification and title														
FHEQ Descriptor for a higher education qualification	FHEQ level 6	Course Learning Outcome(s)												
		1	2	3	4	5	6	7	8					
1) a systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline		X		X	X									
2) an ability to deploy accurately established techniques of analysis and enquiry within a discipline		X	X	X										
3) conceptual understanding that enables the student: a) to devise and sustain arguments, and/or to solve problems, using ideas and techniques, some of which are at the forefront of a discipline b) to describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in the discipline			X	X	X					X				
4) an appreciation of the uncertainty, ambiguity and limits of knowledge		X		X								X		
5) the ability to manage their own learning, and to make use of scholarly reviews and primary sources (for example, refereed research articles and/or original materials appropriate to the discipline).			X			X						X		

Typically, holders of the qualification will be able to:		X			X				
6) apply the methods and techniques that they have learned to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects									
7) critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions - to a problem			X	X					
8) communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.					X	X	X		
And holders will have:		X			X		X	X	
9) the qualities and transferable skills necessary for employment requiring: a) the exercise of initiative and personal responsibility b) decision-making in complex and unpredictable contexts c) the learning ability needed to undertake appropriate further training of a professional or equivalent nature.									

Subject Benchmark Statement(s)	<i>Education Studies 2015. Note LO8 relates to (with Professional Practice Year only)</i>	Evidence and/or Course Learning Outcome(s) <i>How the course takes account of relevant subject benchmark statements</i>
Knowledge and understanding 7.4 On graduating with an honours degree in education studies, students should demonstrate a critical understanding of: <input type="checkbox"/> the underlying values, theories and concepts relevant to education <input type="checkbox"/> the diversity of learners and the complexities of the education process		LO1, LO3, LO4, LO6, LO8

<ul style="list-style-type: none"> <input type="checkbox"/> the complexity of the interaction between learning and local and global contexts, and the extent to which participants (including learners and teachers) can influence the learning process <input type="checkbox"/> the societal and organisational structures and purposes of educational systems, and the possible implications for learners and the learning process. 	
<p>Application 7.5 On graduating with an honours degree in education studies, students should be able to demonstrate the ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> analyse educational concepts, theories and issues of policy in a systematic way <input type="checkbox"/> identify and reflect on potential connections and discontinuities between each of the aspects of subject knowledge and their application in educational policies and contexts <input type="checkbox"/> accommodate new principles and understandings <input type="checkbox"/> select a range of relevant primary and secondary sources, including theoretical and research-based evidence, to extend their knowledge and understanding <ul style="list-style-type: none"> <input type="checkbox"/> use a range of evidence to formulate appropriate and justified ways forward and potential changes in practice. 	LO2, LO3, LO4, LO5, LO7, LO8
<p>Reflection 7.6 On graduating with an honours degree in education studies, students should be able to demonstrate:</p> <ul style="list-style-type: none"> <input type="checkbox"/> the ability to reflect on their own and others' value systems <input type="checkbox"/> the ability to use their knowledge and understanding critically to locate and justify a personal position in relation to the subject <ul style="list-style-type: none"> <input type="checkbox"/> an understanding of the significance and limitations of theory and research. 	LO1, LO4, LO5, LO6,
<p>Transferable skills Communication and presentation 7.7 On graduating with an honours degree in education studies, students should be able to organise and articulate opinions and arguments in speech and writing using relevant specialist vocabulary.</p>	LO2, LO7
<p>Technology 7.8 On graduating with an honours degree in education studies, students should be able to use technology effectively to enhance critical and reflective study.</p>	LO5, LO6, LO7
<p>Application of numerical skills 7.9 On graduating with an honours degree in education studies, students should be</p>	LO2, LO7

<p>able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> collect and apply numerical data, as appropriate <input type="checkbox"/> present data in a variety of formats including graphical and tabular <ul style="list-style-type: none"> <input type="checkbox"/> analyse and interpret both qualitative and quantitative data. 	
<p>Working with others 7.10 On graduating with an honours degree in education studies, students should have the ability to collaborate and plan as part of a team, to carry out roles allocated by the team and take the lead where appropriate, and to fulfil agreed responsibilities.</p>	LO5, LO6, LO8
<p>Improving own learning and performance 7.11 On graduating with an honours degree in education studies, students should be able to articulate their own approaches to learning and organise an effective work pattern including working to deadlines.</p>	LO2, LO5, LO6, LO8
<p>Analytical and problem-solving skills 7.12 On graduating with an honours degree in education studies, students should be able to process and synthesise empirical and theoretical data, to create new syntheses and to present and justify a chosen position having drawn on relevant theoretical perspectives.</p>	LO1, LO2, LO3, LO5